SIXTH

REPORT

FROM THE

SELECT COMMITTEE

ON THE

ROAD

FROM LONDON TO HOLYHEAD;

&c.

Turnpike Trusts between London and Holyhead.

Ordered, by The House of Commons, *to be Printed,*
6 *July* 1819.

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SIXTH REPORT.

THE SELECT COMMITTEE appointed to inquire into the state of the Road from *London* to *Holyhead* by *Coventry* and *Shrewsbury*; into the regulations for the conveyance of His Majesty's Mail between *London* and *Dublin*, and between *Liverpool* and *Dublin*, and from thence through the interior of *Ireland*; and into what Improvements may be made in the accommodation of Persons embarking and disembarking at *Holyhead* and *Howth* respectively; and to report their Observations thereupon, together with the Minutes of the Evidence taken before them from time to time, to the House:——HAVE, pursuant to the Order of the House, further inquired into the Matters to them referred, and have agreed to the following REPORT:

THE Committee of the Session of 1817 gave so full an account in their Report, of the Road from London through Coventry to Holyhead, that it is not necessary to say any thing more to show that this line is preferable to the other lines by Oxford and Chester. Your Committee will therefore proceed to lay before the House, their observations on the progress which has been made by the several Turnpike Trusts, in improving this Road through Coventry, since the date of that report.

In the first place, it is but just to notice the alteration which the St. Albans Trust have nearly completed at Ridge Hill. They have borrowed £.6,000 from the Exchequer Bill Commissioners; and having placed the works under Mr. Telford's direction, the great inconvenience of this hill will very soon be removed. Appendix, N° 5.

The success of this undertaking is a most useful example, to show the other Trusts how easily they may make similar improvements. The additional Tolls which have been imposed by the St. Albans Trust, under the Exchequer Bill Act, pay 12 per cent. for the money borrowed, which is sufficient to redeem the debt in the course of a few years, and to allow of these additional tolls being soon taken off.

The Wolverhampton Trust have also borrowed from the Exchequer Bill Commissioners a sufficient sum to do away the inconvenience of Tettenhal Hill; but they have not commenced the proposed improvement, in consequence of no Plan having as yet been decided upon.

Your Committee feel great satisfaction in having it in their power to say, that all the Trusts have made considerable exertions to improve their respective Districts; and they have no doubt, judging from what has already been done, that they will very soon have the whole line much better than it now is, by adopting without delay, the advice which they will find in Mr. Telford's Report on the state of each Trust, from Shrewsbury to London. Appendix, N° 1.

As it appears in the evidence of Mr. Johnston, the Inspector of Mail Coaches, that the Postmasters-General, when making the last contract for the Holyhead Mail to perform the journey in thirty-six hours, could not get the Proprietors to go the first one hundred miles, from London to Stone-

bridge, at a faster rate than seven miles and a half an hour, although they were able to get the other Proprietors beyond Stonebridge, to go from thence to Wales at eight miles an hour, it is to be hoped that no effort will be spared to overcome this practical inconvenience to the communication with Ireland, by which exactly one hour is lost in the first one hundred miles from London.

Though the materials are not so good along these 100 miles out of London, as they are along the rest of the road, the funds of the Trusts are much richer, and the materials are sufficiently good with proper management to make a perfectly hard and solid road. But as long as the Gravel is made use of according to the ancient system, that is, thrown upon the road without separating the clay from it, and without breaking the large stones, it is utterly impossible the road can become a good one. Upon this point all persons agree, who have any character for scientific skill in road-making; and the success of their practice has fully established its merits. Still however many Surveyors go on according to early notions, supposing that clay can bind stones together, and that a composition of materials partly hard and partly soft is better to bear the pressure and friction of a heavy carriage, than one which consists of nothing but hard materials; till this most absurd prejudice is wholly banished from the practice of the Surveyors of the Road between London and Stonebridge, this part of the Holyhead line must continue to be, as it now is, the principal obstacle in the way of enabling the Holyhead Mail to travel, as it ought to do, at the rate of 8 miles an hour, the whole way from London to Holyhead.

Evidence of Mr. Johnston, pp. 136. 161.

There is one circumstance which ought to encourage the Trustees to adopt the mode of preparing Gravel recommended by Mr. Telford, and that is, the superior economy of this plan. It has been proved in the course of this Session, before the Committee on Turnpike Roads, by Mr. M'Adam, that a very bad road may be made a very good one, at the ordinary expense which is incurred in repairing all the heavy gravel roads about London, by attention to cleaning the gravel and breaking the larger stones. For when all the clay is separated from the gravel, and every stone above an inch and a half in its greatest dimensions is broken, the angular shaped stones bind together in a solid mass, and when placed on the workable part of the road, form so hard a surface that the water does not lie upon it, nor do the wheels cut into it; whereas Gravel, when mixed with clay, is always wet and loose, except for a few days in the year, and grinds as fast as flints in a potters mill, by the constant pressure of heavy carriages upon it when in a moist state. Your Committee particularly recommend all the Trustees of the Holyhead Road to read very carefully the Report of this Session upon the Turnpike Roads, in order that they may see how completely successful the plan has proved, of cleaning and breaking the gravel materials.

With a view to ascertain the exact state of the Road from London to Shrewsbury, in respect to Tolls, Debts, Expenditure, and Labour employed upon it, Your Committee transmitted certain questions to each of the Trusts, the answers to which are inserted in the Appendix; they also examined the principal Coach Proprietors and Surveyors of the Road. But the Report which Mr. Telford has made to the Holyhead Road Commissioners, in consequence of an Order given to him by the Lords of the Treasury, at the recommendation of the Committee of 1817, to make a survey of the whole Road from London to Wales, has afforded Your Committee the fullest possible information upon every thing belonging to it. This Report will be read, not only by every one feeling an interest in this particular line of Road, but also by all those who are anxious to see the whole system of Road-making generally improved, with the greatest satisfaction and advantage.

Appendix, N° 3.

Appendix, N° 2.

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Your Committee recommend to the notice of the House, and of all the Road Trustees, the concluding remarks of Mr. Telford, which apply generally to the whole subject of road-repairing. In these they will find all the leading principles of this particular science very clearly laid down and explained. The Trustees will thus be able, without any other difficulty than that of instructing their Surveyors to pay strict attention to these principles, to secure the gradual and effectual improvement of the whole line of the Road.

Appendix, p. 132.

Another Report, it appears, is still to be expected from Mr. Telford, when he shall have completed his survey, in which he will point out, and give Plans and Estimates of all the most important alterations and improvements which can be made between London and Shrewsbury. The general outline of them he has described in his First Report; but when he shall have prepared all his Plans, it will be a matter of the greatest public utility to have them speedily carried into execution by the different Trusts. For this purpose no means seem to be so fit as those which the power of borrowing Exchequer Bills affords, after the example of the St. Albans and Wolverhampton Trusts; and therefore it will prove particularly useful towards the great object of making this line of Road quite perfect, if each Trust shall borrow whatever sum it may require for the improvement of its own District.

The parts of the Road which appear to Your Committee, to be in the worst state, and to stand in need of considerable improvements, are;—1st. The Highgate Archway Road.—2d. The Road from Hadley Pillar to Colney,—3d. The Road from Hockliffe to Fenny Stratford.—4th. The whole Road from Towcester to Dunchurch.—5th. The Road from Dunchurch to Coventry.—6th. The Road from Meriden to Stonebridge.—7th. The Road from the Wergs to Bonningale.—8th. Overly Hill.

Although Your Committee have made a distinct Report in this Session, on the state of the road through North Wales; the passing of an Act for consolidating under one Commission all the districts from Shrewsbury to Holyhead, a distance of 110 miles, and formerly under seven different Trusts; and the Report which Mr. Telford has made to the Holyhead Road Commissioners, upon the whole of the works he has conducted in the last four years in Wales, induce Your Committee to make some further observations upon it.

In respect to the new Act, they are strongly of opinion that it forms the best possible model for an improved system of Road management throughout the United Kingdom: the Commissioners are limited in number to fifteen upon 110 miles; they are bound to employ a professional civil engineer to superintend and manage and be responsible for the whole of the repairs and improvements; they are required to lay an account every year of their income and expenditure before Parliament; and if they allow the road to go out of repair, there is a power vested in the Crown to remove them, and appoint new Commissioners in their place.

Mr. Telford's Report on the Welsh road improvements deserves to be read with considerable attention; it gives a very accurate description of a method of road-making, which must be quite new to all those who have not paid that close attention to the subject which is necessary, to enable them to comprehend that this business comprises a most intricate science, and one of great difficulty to acquire, and of still greater difficulty to apply with advantage, even in the most ordinary cases.

Without such skill and experience as Mr. Telford has by long practice and superior talents been able to attain, it would have been impossible

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to have made a road without a single inconvenient hill upon it, through such a rugged and mountainous country as North Wales. His complete success, therefore, in this instance, ought to lead all those who are intrusted by Parliament with the important duty of managing the very large sums of public money which are collected from Turnpike tolls, to place great reliance on his recommendations; and to feel, when they have formed maxims of road making and repairing in their own minds, which prove to be quite opposite to his, that they ought to doubt their validity, and not be very obstinate in persisting in acting upon them.

As Parliament has passed a new Act to enable the Holyhead Road Commissioners to build a bridge across the Menai Straits, and to make an entirely new road across the Island of Anglesea, and as a Grant has also been voted in this Session, of £. 15,000, for making further improvements on the road between Bangor Ferry and Shrewsbury, the whole of the road through Wales, in the course of two or three years, will be by far the most perfect road in the United Kingdom; the Mail will have no difficulty whatever in travelling it at the rate of eight miles an hour, including all stoppages. If the road from London to Stonebridge shall be at the same time as much improved as it ought to be, then it will be practicable to perform the whole journey from London to Holyhead of 264 miles, at 8 miles an hour, which will make the whole time 33 hours. If to this time one hour is added for extra Post Office business at Birmingham and Shrewsbury, the Mail will arrive at Holyhead at 6 o'clock the second morning from London; and the English letters will reach Dublin, with a favourable wind, at three o'clock the second evening from London, in time to be answered the same evening, or to be forwarded by the Irish Mail Coaches.

Your Committee have felt it right to make this statement, in order to impress upon the several Trustees of the Road from London to Shrewsbury, the very great importance of every moment that can be saved in conveying the Mail to Holyhead; for it clearly shows that a very few minutes one way or the other, must frequently save or lose 24 hours in the time requisite for receiving an answer to a letter.

Your Committee beg to take this opportunity to suggest, for the serious consideration of the several Trustees of the Road between London and Shrewsbury, whether it would not be very desirable to consolidate the whole of the Trusts into one or more commissions, similar to that which has been appointed for the Road from Shrewsbury to Holyhead. Such a plan would secure more uniformity of management, and admit of a sufficient Salary being given to command the whole of the time and services of an experienced civil Engineer. There can be no doubt that the repairs and improvements might be carried on, not only with more skill and utility to the public, but also at a less expense than is now incurred upon them. The debts might remain secured in the same way they now are; and the tolls, after a very few years, would admit of being reduced. If such a plan was adopted, there would be no necessity of displacing the present Surveyors, as they would be wanting as Inspectors, to superintend the works directed to be performed by the Commissioners, according to the Plans and Estimates of the Engineer.

From all the information that has come before Your Committee, they feel quite convinced that this principle of consolidating the Trusts is not only wanting upon the Holyhead Road, but upon every great line of road in the United Kingdom; and that until it is adopted by Parliament, the system of small Districts and large bodies of Trustees must prove an insurmountable impediment in the way of removing the great defects which are now to be found on all the Turnpike Roads. The want of proper form, of sufficient drainage, of due exposure to the sun and air, and of the necessary solidity on the workable parts, is to be found in every hundred yards

yards of road, go in whatever direction you will, from the General Post Office to the most distant parts of the Kingdom; excepting where of late years certain limited distances of road have been placed under the sole management of distinguished professional Roadmakers. And these serious defects, which give rise to so much delay and inconvenience to the Traveller, and which occasion such an immense annual loss in Horses, will continue until the science and experience of regularly educated professional Engineers and Workmen are substituted for the imperfect and more expensive methods of managing labour and materials, which are pursued by the generality of Road Surveyors.

The practice of making the Tolls collected from travellers a fund to employ the parish Paupers, is one which cannot be justified upon any sound or just principle. The traveller has a right to expect that the money he pays for turnpike toll, should be expended in the best possible manner in the repair of the road: but to give it to old worn-out labourers is a complete misapplication of it. If the Poor are employed on the roads, it ought to be by piece work, so that each man might receive payment for exactly what work he does, and for no more: but according to the present way of paying them by the day, a great deal of money is expended, and little or no return is obtained for it. Every one who travels the Holyhead Road, must acknowledge that many of the men employed upon it are much too old to be able to earn the money which is paid to them.

If the right way of preparing Gravel for the road was adopted, it would occasion a very great increase of employment for aged workmen and for women and children; for they would be more fit than able men for breaking the gravel stones. This work is done in a sitting posture, and with light hammers, so made as to require little force to break a stone. By breaking every stone which is more than 1½ inch in its greatest dimensions, nearly two-thirds of a well washed heap of good gravel are to be broken. This business is now going on at Ridge Hill, and those Surveyors who wish to see the best way of preparing gravel, may there obtain some very useful information. The gravel as it comes from the pit is well sifted; then it is washed in sieves, held under the water: The stone-breakers then rake out, according as they want a supply, the stones exceeding 1½ inch in length or breadth. Those which they break, they put together in separate heaps. The new Road at Ridge Hill is formed as follows: there being no stone in the County, a layer of six inches of chalk is put over the clay, then six inches of well screened gravel over that, then three inches more of chalk, and upon this is laid for eight feet of each side of the centre of the Road, the broken gravel stone three inches deep, making a breadth of 16 feet of broken gravel stone: on each side of this, the small gravel stones are put for four feet wide and three inches deep; and on each side of these small stones, the siftings of the gravel is put, also three inches deep. And thus a Road is formed, having the 16 centre feet composed wholly of broken stone, eight feet of small well cleaned gravel, and six feet of weaker materials. No part of the gravel is wasted, and the Road is strong where it ought to be so. The same sort of surface dressing would answer for all Roads having a good foundation; and it would cost much less than the heavy coats of ballast, which have lately been laid on the Whetstone and other trusts, one half of which is pure clay. This way of mending a Road, makes at least one horse's draft in four additional labour to move heavy loaded carriages.

Your Committee, before they close this their last Report upon the very important subjects which have been referred to them, feel it to be due to the credit of the Committees of 1815 and 1817, who have preceded them, to recapitulate very shortly what have been the practical results of their labours.

1. In consequence of the Holyhead Mail being sent through Coventry in place of Oxford, and of other regulations of the Post Office, it performs the journey in thirty-six hours; that is, in six hours less time than it did in 1815, and in 10 hours less time than it did in 1808.

2. In 1815, an Act was passed to appoint Commissioners for the improvement of the Road from London to Holyhead. It appears by Mr. Telford's Report on the Road in North Wales, that they have made thirty miles of new road, where the old road was the most difficult and dangerous. They will be able to complete ten miles more in the course of this year, with the grant of money which has been made for this purpose in the present session.

3. In the present session an Act has passed, and money has been granted, to enable these Commissioners to build a Bridge across the Menai Straits, and to make a new Road, of twenty-two miles in length, across the island of Anglesea, by which nearly 3 miles will be saved, and all the steep Hills on the present road.

4. Another Act has passed this session, to vest the whole line of Road of 110 miles from Shrewsbury to Holyhead in fifteen Commissioners, who will have sufficient funds to maintain the new parts of the road in their present perfect state, and, by degrees, to alter and make equally perfect the remaining parts of this Road.

5. In consequence of the recommendation of the Committee of 1817, Mr. Telford has made a Survey of the Road from Shrewsbury to London; and several of the Trusts have already done a great deal towards the improvement of this Road.

6. In consequence of the recommendation of both the Committees of 1815 and 1817, the Lords of the Treasury have enabled the Post Office Packets at Holyhead to carry Coach Parcels; and have thus removed a very great impediment in the way of a free communication between the two countries.

7. The Committee of 1817 having suggested the utility of a Boat Harbour for the Packets to be able to land the Mail and Passengers on the South shore of Holyhead Island in Easterly Winds, one has been constructed at Port Devargh, and a new Road has been made to it from Holyhead.

8. In addition to these improvements, a new Mail has been established this Spring to run between Liverpool and Holyhead, in consequence of a communication between Your Committee and the Post Office, by which the North of England Letters arrive at Holyhead at the same time with the London Letters, and in time for the Packets. This Mail, by leaving Holyhead two hours before the London Mail, brings the Irish Letters to Liverpool, in time to be delivered every morning with the London Letters.

All that remains to be done, as it appears to Your Committee, to complete the object of establishing a perfect communication between England and Ireland, is, First to improve the Road for the first 100 miles from London, so that the Mail may go to Holyhead in 34 hours; Secondly, to improve the construction of the Packets; Thirdly, to improve, by new Regulations, the conveyance of the English Letters throughout the interior of Ireland; Fourthly, to remove all the inconveniences which Travellers now experience on landing and embarking at Holyhead and Howth, from being subject to a strict examination of their Luggage, and the payment of Fees to the Post Office Boatmen, and the Custom House Porters.

6 July 1819.

APPENDIX.

Appendix, N° 1.

MR. TELFORD'S REPORT

ON THE ENGLISH PART OF THE HOLYHEAD ROAD:

June 1819.

N° 1.

Mr. Telford's Report on the English part of the Holyhead Road.

IN compliance with instructions from the Treasury, dated 13th February 1818, and also explanatory directions from the Commissioners for the Holyhead Road, dated 2nd June following, commanding me to make a Survey and Report respecting the Mail Coach Road between London and the Eastern Boundary of North Wales, at the village of Chirk, in the county of Denbigh, I lost no time in adopting measures for the performance of this service.

The great extent of country through which this survey extends, the numerous variations from, and improvements upon, the present road, which may be made, and the great importance of having this main line of communication between London and Dublin as perfect as circumstances will admit of, has rendered this service laborious and tedious.

The whole of the present road, a distance of about 178 miles, has been carefully surveyed, and accurately laid down in proper maps and sections. I have compared these with the ground, and obtained data to enable me to report thereon. Many of the necessary variations and improvements have also been surveyed; but, as still more time is required to obtain fuller information respecting these last-mentioned objects, I am convinced that the public good will be best consulted by confining this report to the state of the road, and what may be improved by the means now in the hands of the Road Trustees, and, at present, only stating generally where variations are obviously necessary.

The improvements upon the Holyhead Road having already been carried to a considerable extent in North Wales, and the inspection having been made from thence towards London, I shall commence this report at Chirk.

During the time this survey was carrying on, an act having been obtained, consolidating the Mail Road Trusts between Holyhead and Shrewsbury, the management, and gradual improvement of this distance, of 23 miles two furlongs, will of course come under the directions of the Commissioners appointed by that act, I shall, therefore, (although included in the map,) avoid entering into discussions respecting this District.

SHREWSBURY DISTRICT of the WATLING STREET ROAD,

Consists of a distance of about seven miles.

FROM the town of Shrewsbury, over Emstry Hill, to near Atcham, where the river Severn injures the side of the road, being upwards of three miles, the road is repaired with gravel, got at the southern suburb of Shrewsbury, called the Abbey Foregate. It has not been the practice to separate and break the larger stones; this should in future be carefully done, and the stones thus broken, (say into a size not to exceed six ounces weight,) should be laid on the middle part of the road; they would, in this shape, wear better, would be the means of binding the other parts of the gravel, and make a smooth road. The road should also be made good

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for the whole breadth between the footpath and fence, allowing a slope on each side of from six to nine inches, according to the breadth, below the middle of the road. This is quite sufficient to take off the water, which should never be suffered to run far along the road, but be conveyed to field ditches, which should, where necessary, be cleansed out so as to give a free passage to the water.

The hill near Emstry Toll Gate is much too steep, being at the rate of one in twelve. It should be reduced so as not to exceed one in twenty-four, which may be done by cutting off about three and a half feet, and, with the excavated ground, raising the road in the lowest part. The cutting and embanking would, together, extend to about 210 yards in length.

At the before-mentioned bend of the river, the channel being too narrow, and the south bank, on which the road passes, being gravel and sand, the great body of the water in floods has deepened the channel, and continually undercuts the bank, which being pervious to the flood, and also land-water, is easily destroyed. For many years past attempts have been made to protect this bank by means of piles, faggots and willows. These attempts have been frequently and ineffectually repeated, at a very considerable expense, and will, in my opinion, be still so, while the same mode is persisted in. The only effectual remedy would be to remove the road into the field to the southward, for a length of about 1000 yards, and slope the space at present occupied by the road, so as to make an inclination of three horizontal to one perpendicular. The earth excavated by this sloping, might be employed with advantage in raising the low part of the road adjacent to Atcham Bridge, which at present is, in the time of floods, not unfrequently covered so as to be quite impassable. This new road should be 32 feet in breadth between the footpath and the fence.

From Atcham Bridge to Tern Bridge, the breadth between the fences is quite sufficient, but only a portion of that breadth is fit for wheel carriages; the remainder is soft mud, from which the water cannot be taken; the stoning, or metalling, or good gravelling, should be extended in breadth quite to each fence, with slopes on each side, of about nine inches below the middle of the road, to receive and conduct the water to the cross drains, or proper side outlets. In this distance three cross drains are wanted; also drains under the entrance to field gates, which at present dam up the water, so as in rainy weather to stand quite across the road.

From Tern Bridge to the Horse-shoe public house, the sides of the road and cross drains are equally imperfect; and here the road is frequently much too narrow, being only twenty-four and twenty-six feet between the fences, and so much under the surface of the adjacent fields, as to confine the water upon the sides of the road for too long a distance: this, besides softening and injuring the workable roadway, narrows its breadth, so as to create a real inconveniency; this should be remedied by widening to, say thirty-two feet between the fences. This width would admit sun and air, and by judicious management would afford opportunities of cutting off bends, and of bringing the road into a good direction longitudinally, as well as a proper cross section; afterwards the fences should be kept low.

At the Horse-shoe public house the road turns at nearly two right angles; this should be remedied by a diagonal line for about a quarter of a mile on the northern side of the present road; this would also shorten the distance about 150 yards.

From the last-mentioned point to the eastern termination of this trust, (which is about 300 yards west of the seven-mile stone from Shrewsbury,) the road continues to be frequently too narrow, being only about twenty-five feet between the fences; the sides are frequently imperfect, which renders the workable part of the road inconveniently narrow, and the surface is frequently below the surface of the adjacent fields; widening and making good the sides are therefore required for most of this distance; some cross drains are also wanted; and some of the field drains should be cleared out so as to carry the water clear off the road.

From Atcham Bridge to this eastern termination the road has formerly been repaired by putting on field stones of all sizes promiscuously, and at the same time mixed with soft mud; many of the large stones still remain; they compose a very uneven surface, and are the means of unnecessary destruction to the stones of a more proper size which have been lately employed; these large stones should be therefore carefully taken up and broken to under six ounces in weight.

At

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At present the road material, for the portion of road which is east of the before-mentioned bend of the Severn, is procured from rock on the summit of Overly Hill, a little way from the eastern extremity of the Trust. The stone is of excellent quality; it requires to be blasted from the natural mass of rock, and then broke into the proper size: it has lately been put on very judiciously during the winter months. The present contractor, Mr. Jones, appears to understand what is required; he has to a certain degree improved the road, and under proper regulations and directions would, I have no doubt, in time make it perfect.

Upon this trust it is not customary to make out any specification to what extent, or in what manner, the repairs are to be performed, the contractor is merely to keep the road in a proper state of repair to the satisfaction of the trustees; but as no committee of trustees is appointed to take special charge of the operations performed, these operations must therefore be performed to the satisfaction of any individual trustee who will occasionally inspect them; and in this case the surveyor and contractor are united in the person of Mr. Robert Jones. I do not mean to insinuate that Mr. Jones takes any undue advantage of all this, on the contrary, he has, I am convinced, very materially improved the road; but the mode of management must be admitted as very defective.

Tolls taken upon this Trust:

Chaise and pair	6*d.*
D° four	12*d.*
Team-horses, each	3*d.*
Saddle - D° - D°	1*d.*
Cows, oxen, &c. &c. per score	10*d.*
Sheep, pigs, &c. - D°	5*d.*

The Rent of the Tolls from Lady-day 1818, to Lady-day 1819 - - £.735.

The Expenditure of 1817 was £.580 18 8
D° - - - - 1818 - - 768 13 7

The particulars of Expenditure of 1818 were as follow:

	£. s. d.	£. s. d.	£. s. d.
In discharge of debts due previous to 1817,	121 19 —	143 17 —	
Paid interest on D°	21 18 —		
Interest this year upon mortgage debt		227 7 4	
To the contractor, balance due 1817		39 — —	
To the amount of one year's contract	272 10 —		
Ditto for extra work	20 — —		
		292 10 —	
N. B. Mr. Robert Jones (formerly Road Inspector), in November 1816, in consequence of ill-tempered remarks by Trustees, undertook the repairs for five years at the before-mentioned sum, but this is exclusive of statute-labour, which, if fully enforced, may be about 200 days, which, valued at the highest the magistrates can put it (viz. 12*s*,) would be - £.120.	£. s. d.		
Contributions for sums under 50*l.* &c. - - 30.	150 — —		
But enforcing this duty is very troublesome and difficult.			
Repairing turnpike house and gates, lamp-oil, &c. -		27 15 1	
Post and rails - - - - - - -		7 18 5	
Advertising and stationary - - - - -		3 6 6	
Incidental expense - - - - - -		5 19 3	
Salary of Mr. John Jones, acting as Secretary and Treasurer - - - - - - -		21 — —	
			768 13 7

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		£.	s.	d.	£.	s.	d.
Here the revenue is - - - - - -		735	—	—			
The interest upon the mortgage debt £. 227 7 4							
Salaries and incidental expenses, including the repairing toll-house 65 19 3		293	6	7			
Difference - -		441	13	5			
To which is to be added the value of statute-duty which may be collected, say - - - -		100	—	—			
		541	13	5			
But the present Contract for keeping the road is - - - - £. 272 10 —							
Eor extra work - - - 20 — —		392	10	—			
Statute-work, say - - - 100 — —							
Leaves a surplus of - £.		149	3	5			

or about 21 *l.* per mile. Now if this was for a few years laid out upon improving the road, in regard to its width, side and cross drains, and increasing the breadth of broken stones, or metalling, the road would not only be more perfect, but would cost less in future repairs, and the surplus might then be applied towards discharging the debts. Improvements to this extent, might, I think, fairly be expected from the present tolls. For those of greater expense other funds must be provided.

To bring the management of this Trust into a regular shape, a committee of three persons should be annually appointed to this seven miles of road, in whose charge the operative part should be placed.—There should annually be a written specification made out, stating precisely what should be performed by the contractor. The district is so limited, that a respectable Surveyor cannot be paid for, without appropriating an unreasonable proportion of the revenue; therefore the Committee must either themselves perform that office, which by having a distinct specification they can be at little loss to do (if they can afford as much time), otherwise they must make arrangements with other Trusts in the neighbourhood, so as together to employ, and give a proper remuneration to, an able, upright and experienced person, whose whole time and attention shall be exclusively given to these roads.

The following improvements, viz. 1st. Altering the Hill at Emstry Toll Gate; 2d. Making about 1,000 yards of new road near Atcham, where the river Severn undermines the present; and, 3d. Cutting off two right angles near the Horse Shoe public-house, requiring about 500 yards new road: These, taken together, may cost about 2,500*l.*, and might be very readily accomplished by borrowing Exchequer Bills to this amount; and under the powers of that Act raising the tolls to repay them with interest; and by transferring this power to the Commissioners of Holyhead road, these improvements might be carried on under the same establishment as those in North Wales, and when completed, be given up to the present ordinary Trustees, and become part of the general roadway.

Mr. John Jones, of Shrewsbury, is clerk to this Trust.

WELLINGTON TRUST, on the MAIL ROAD,

commences at the Eastern extremity of the Shrewsbury Trust, passes Overly Hill by the inn called Hay Gate, along the Watling Street, across Kettley Brook, and along the new road to near the crossing of the Shropshire Canal, being in all a distance of seven miles and one furlong.

From the commencement to the top of Overly Hill, the surface of the road is very rough, many large stones are sticking up; they should be taken out and broken small; the side and cross drains require to be cleaned out; and the workable part of the roadway should have a coat of at least six inches in thickness of metal, or small broken stones, say, none to exceed six ounces. A considerable portion of this part of the road is too narrow, being only 22, 23, 27 and 28 feet between the fences: much of it is also under the level of the surface of the adjacent fields; and, as the before-mentioned eadthrb includes side drains, the workable part of the road is rendered

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rendered inconveniently narrow. Increasing the width to 32 feet is therefore indispensably necessary for a proper mail road.

The longitudinal inclinations on each side of the summit of Overly Hill being in some places one in 15½, and the whole ascents, long continued, render this hill a great obstacle in the way of travelling; a line sufficiently level may be obtained by passing along the northern side of the hill. The length of this variation would be about one mile 1,144 yards, and by it 65 feet of absolute height would be avoided.

From Overly Hill to the Hay Gate the road is too narrow, being only from 24 to 27 feet between the fences, out of which a footpath is taken, as well as the side drains. The width should therefore be increased to at least 32 feet, exclusive of the footpath. The surface of the road opposite Overly Park is in very good condition, and sundry cross drains have been put in. This practice should be extended to the rest of the road. As far as the Hay Gate Inn the road is repaired with stones from Overly Hill, which, when properly selected and broken, and laid on in sufficient quantities, will answer the purpose. There is also stone in a field near Burcott Toll, within about 132 yards of the road, but the Surveyor is not permitted to take material from thence. As the road might be brought alongside of a fence, this restriction ought to be removed, and considerable expense in carriage thereby saved.

From Hay Gate Inn to the Cock Inn, Watling Street, the road passes over some irregular ground, with inclinations, in some instances, of one in 17. This might easily be remedied by cutting down some small heights, and filling up hollows with the excavated ground; but the road has also some quick bends, and is too narrow, being only 17, 20, 22 and 24 feet, out of which about six feet remain to be taken for footpath and side drains, which leaves much too narrow a space for the workable roadway. Here, therefore, widening is necessary, and is rendered, in sundry instances, difficult, on account of small houses and gardens which are close to the roadway. From Hay Gate to the Cock Inn the road is repaired with stone from a quarry at about half a mile distance, called Arcall. This is not so hard as the Overly stone, but if properly selected may do very well.

From the Cock Inn to the top of Kettley Bank, the road first passes along some low ground, it then ascends a hill at the rate of one in 14½, and descends towards Kettley Brook at one in 13, 15, &c. and then ascends at nearly the same rates to the top of Kettley Bank. The road is also, in some parts, sunk about 11 feet below the surface of the adjacent fields; it is likewise too narrow, being only about 27 feet, including footpaths and side drains; in one instance it is only 17 feet. This part of the road, therefore, evidently requires to be changed, and this may be done by carrying a new line along the fields and cinder-hills on the south side of the present road.

From the top of Kettley Bank to the termination of this Trust, near the Shropshire Canal, a very valuable improvement has been effected, upon a distance of about one Mile 323 yards, at an expense of about 2,000*l.* The breadth of this new road is forty feet between the fences, but this includes a footpath; it has been very judiciously laid out by Mr. Henry Williams, and is one instance of the benefit arising by employing a scientific man. From the Cock Inn to this place the road is made and repaired with cinders from the wastes of Kettley Iron-works; these being very near the road are obtained at a small expense; but where there is so great a quantity of heavy team-work, and fourteen coaches passing daily, this material is by no means effective, it is very soon ground to soft mud, and costs nearly as much in raking and removing as in putting it upon the road, and, excepting in very dry weather, is a very heavy road.

Tolls taken upon this Trust:

Chaise and pair - - - - - - - -	6*d.*
D° - four - - - - - - - -	12*d.*
Team-horses - each - - - - - - -	3*d.*
Saddle D° - D° - - - - - - -	1*d.*
Oxen, cows, &c. &c. per score - - - - -	10*d.*
Sheep, pigs, &c. - D° - - - - - -	5*d.*

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The total expense paid by the Inspector for this seven miles of road during the year 1818, was	£. 332	5	3
Sundry tradesmens bills, and improvements, paid by the clerk, about	100	—	—
Inspector's salary	41	12	—
Interest on mortgage debt	100	—	—
	£. 573	17	3

To this should be added a proportion of the clerk's and treasurer's salary.

As this seven miles of mail road is only part of the Wellington Trust of twenty-one miles, the Tolls of which are all let together for 1,305 *l.* per annum, the Toll collected upon the mail road cannot be precisely ascertained; but as the distance and intercourse must be nearly the same as in the Shrewsbury District, and the materials more convenient, similar results may be drawn; viz. that the widening and improving the surface of the road and cross drains might be accomplished by the present tolls; but that the improvement at Overly Hill, and at Kettley will require other funds. Until the separate sections and estimates are prepared for these improvements I presume not to say precisely what they should cost; but taking them at a ratio corresponding with the alterations between Kettley and the Shropshire Canal, they may be reckoned at about 3,000 *l.*, and this sum does not exceed what the increased tolls authorized by the Exchequer-Bill Act will cover.

I do not understand that there is any select Committee of Trustees for the management of this road. There are no specifications made out of the works to be performed, nor any general contract.

The statute-labour upon the mail coach part of the road is reckoned at about 140 days work of a team annually.

The clerk and surveyor upon this Trust is a Mr. Thomas Pugh, and he has for assistant, upon the mail road, Mr. Thomas Stilgo, both respectable steady men.

SHIFFNAL TRUST.

THIS trust commences at the Shropshire Canal, and passes through Shiffnal to the toll-bar at the east end of the town, being a distance of about four miles and 67 yards. From the commencement, for about half a mile, the new Snedshill improvement continues, until it joins the old road. This change has been the means of avoiding a part of the former very steep bank; but the present ascent, being one in 20, is too much, especially as it might have been avoided, as well as the steep descent of one in 12 and 18 at Priorslee Hall. The line ought to have been carried considerably more to the westward, on nearly a level, and then returned towards the toll-bar; and to perfect the mail road, this should still, in my opinion, be done, leaving the present road for the accommodation of the works on the summit of Snedshill, which was, most probably, considered as a sufficiently good reason for carrying the new mail line to that place. This variation has cost, I understand, about 400 *l.*

To the eastward of the toll-bar another essential improvement may be obtained by a variation of about 1210 yards, by which two hills would be greatly eased, a hollow filled up, and the distance shortened. From the eastern end of the last-mentioned variation, to the town of Shiffnal, the width of the road is sufficient, the surface is smooth, and the descent, though long continued, is not inconveniently steep.

The materials employed upon this trust are altogether cinders from Snedshill, and cost in carriage about one shilling per ton per mile, 24 cubic feet weighing a ton. The statute-duty is said to be very unproductive.

As the tolls upon this Trust, as well as on the two last-mentioned, are very moderate, there does not appear any good reason why they should not have a temporary addition, to enable Exchequer Bills to be borrowed, to execute the improvements here recommended.

The Tolls are, for a chaise and pair	6 *d.*
- D° - and four	12 *d.*
Team-horses, each	3 *d.*
Saddle-horse, ditto	1 *d.*
Black cattle, per score	10 *d.*
Sheep and pigs, ditto	5 *d.*

Amount

		£. s. d.
Amount of tolls from 1st May 1817 to 1st May 1818 -		650 — —
Interest upon 240*l.* - - - -	£. 12 — —	
Salaries - - - - -	56 17 —	
Expenses upon Road - - - -	366 — —	
		434 17 —
Surplus - - -		£. 215 3 —

N. B. This statement is made upon the whole Trusts; that is,

	M.	F.	Y.
On Holyhead road - - - - - - -	4	0	67
On Ivesy Bank road - - - - - -	6	4	61
TOTAL - -	10	4	128

This Trust, besides the mail road, takes in part of the Ivesy Bank road.

Mr. Robert Fisher is clerk; and the present surveyor is Mr. Philip Saunders.

WOLVERHAMPTON TRUST.

THIS Trust commences at the eastern extremity of the town of Shiffnal, and extends to Gibbet Lane, which is about two miles eastward of the town of Wolverhampton, being a distance of fourteen miles.

From Shiffnal the road passes over Upton Hill, which consists of red sandstone, and through which the road has, at the summit, been cut nine feet in depth: the width of the road is about 30 feet between the fences, and the inclinations one in 20 and 23.

From the eastern side of this hill to the western side of Cosford Brook, the road passes over a flat sandy plain, most of which has been lately inclosed; excepting, in one instance, for a short distance, between some cottages and gardens. The road is in general above 30 feet in breadth, between the fences; it is still repaired with cinders brought from Snedshill; it is at present too flat and irregular in the middle, and should be brought into better shape in the cross section, The valley of Cosford Brook is deep, and of considerable width; the descent on the western side one in 17 for 187 yards; the road has already been cut deeply in sandstone rock, in one place where it is 18 feet below the surface of the adjacent fields, it is only 20 feet wide on an average. The bottom of the valley is 156 yards, and the ascent on the eastern side is 121 yards at one in 12. The road has here also been cut in the before-described rock to the depth of 24 feet, and is only 19 feet in width. The bottom of the valley has already been embanked eight feet, and is 24 feet in breadth at top. From this description it must be evident that great exertions have already been made, and that still much cutting and embanking, as well as a new bridge, are required, to render this a safe and commodious road.

At Cosford Mill the roadway is only 22 feet in width between the fences; near Whiston Cross it is only 26, and the surface of the road is frequently from four to six feet below that of the adjacent fields, and also shaded by hedges and trees; and near Whiston Cross the ascent is at the rate of one in 21 for 220 yards. There is here much reason for making the road wider, and of a hard smooth surface. Thus far the road has still been repaired with cinders, although the expense of carriage is 6*s.* for each ton of 24 cubic feet.

From this place the road ascends at one in 21 for 132 yards, and afterwards passes, by very gentle inclinations, over sandy ground to 770 yards east of Bonninghall Inn. In this distance the breadth of road is very irregular, being between the fences, 22, 23, 24, 26, 28, 30, 36, 40, and 42 feet, so that one quarter of the whole distance requires to be made wider; the hedges are generally too high. This part of the road is generally repaired with land pebbles, but laid on promiscuously without being broken. I picked up some four and five inches, and these of a round form. They were shown to the clerk and surveyor at Wolverhampton. The surface of the road is too flat, and rather, in sundry places, hollow in the middle; it should be changed to a gentle convexity, and have regular side and cross drains.

From the last-mentioned place, past the Inn called the Summer House, and to the summit of the hill a distance of upwards of a mile and a furlong, the road

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ascends by long-continued and steep inclinations, being for 209 yards one in 23; for 258 yards 1 in 15; after passing the Summer House, the new variation for 462 yards is one in 19. All this, being upon a loose sandy surface, renders it very fatiguing for horses. It is more complained of than almost any other place on the road. An excellent road might be obtained by leaving the present road near Bonninghall Inn, and carrying a line round the eastern shoulder of the hill, where no inclination would be more than one in thirty, generally less. The eastern termination of this proposed variation would be at the point where the road to the village of Oaken leaves the present road. This change would not increase the general length of the road.

From where this change would terminate, the road descends southward to a small brook, and ascends towards the village of Wergs at one in 25. Through the village the direction is north-east; the road afterwards passes in nearly a straight line to the top of Tettenhall Bank, except that the line is not very direct; and at a place near a Brickwork the breadth is only 24 feet; the road is sufficiently wide (being 33 to 44 feet). The inclinations are not objectionable, and the surface is in good order. It is repaired with field pebble stones, which are, in general, broken to a tolerably small size, although for repairing roads, somewhat smaller would be still better.

Tettenhall Hill has long been complained of as an obtacle to travelling, the roadway being narrow, with inclinations of one in eight and a half, and nine, for a very considerable distance. There have been several projects for its improvement, and Exchequer Bills have been actually borrowed, but from the diversity of opinions amongst the Trustees no plan has as yet been fixed upon.

From the Canal bridge to the town of Wolverhampton, the road has been greatly improved, and is now in a good condition. A sort of limestone is used here, it is brought from near Bilston by the canal-boats, and then carried to the road, at the expense upon the whole of about 3 *s.* 6 *d.* per ton. The contractor then breaks and spreads it, under the direction of the surveyor, Mr. Powis. Proper attention seems to be paid to what is performed here, only the stones ought to be broken of a still smaller size.

In the western quarter of the town of Wolverhampton an important improvement is in contemplation, and is, in truth, commenced, by a purchase of the premises which are in the new line: by this a direct opening will be made from the market-place, across some gardens, and the back entrance lane to the Lion Inn, so as to join the present road a little above the weighing machine; this will make a direct and easy entrance, instead of the present up John-street, which ascends at one in 17½. When this has been completed it will, in some measure, compensate for the zig-zag entrance to the eastern side of the town.

From the town to the eastern extremity of the Trust the road is of a proper width, and in a good condition. Next the town it is repaired with Rowley ragstone, which is laid alongside the road at 4 *s.* 6 *d.* per ton. The contractor then spreads it. The remainder of the road is made and repaired with cinders; they cost about 1 *s.* per ton laid on the road. A coat, 18 inches in depth, will last about 12 months; but in all cases, except where there is dry sand under them, these cinders are very soon ground to mud by heavy carriages; they create a very heavy road, and cost much trouble and expense in scraping and removing.

Upon the whole of the Trust, of 26 miles, there is 415 *l.* paid to the Contractor for keeping off the water, raking off the mud, stocking the ruts, and breaking and spreading the stones, and of this about three quarters may be reckoned for the 14 miles of mail road, say 310 *l.* or about 22 *l.* 3 *s.* per mile.

The whole tolls collected on the 26 miles is at present 2,564 *l.* from which 900 *l.* must be deducted to pay the Exchequer Bills borrowed for Tettenhall Hill; also 312 *l.* for salaries, and interest of mortgage debt, leaving 1,352 *l.* of which 345 *l.* may be reckoned for the Walsal and Bridgenorth roads, and the remaining 1,007 *l.* or about 72 *l.* per mile for the Holyhead road.

From this statement it appears that the present tolls may, with good management, be equal to widening the road and improving its surface, and, with the additional tolls under the Exchequer Bill Act, may, (if the Trustees can agree upon a proper plan) improve the road at Tettenhall Hill, but these seem the utmost they can be expected to cover; therefore the proposed improvements at the Summer-house Hill and Cosford Brook will require that other funds be provided, and these two would require about 5,000 *l.*

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This Trust procures materials with difficulty, and at a great expense. It would be prudent to hold out liberal terms for farmers to lay down stones by the sides of the road, at a rate per ton weight, or per cubic yard, which might be the means of bringing them from a considerable distance, on each side of the road. These pebble stones are so much superior to any other material, that every means should be resorted to to procure them; and, in order that they might be used for the top, working metal only, I would advise to pave the bottom of the road with hard free-stone, of which there is plenty to be had conveniently in the Trust. Constructing a firm and perfect bottoming of this, with a gentle convex cross section, and the pebble metalling being broke small, and put on this bottom bed, free of all clay or earth, would make a hard durable roadway. To this should be added correct side and cross drains, and unceasing attention to keep the surface smooth. If this mode was adopted, and judiciously managed, the use of cinders would be restricted to the immediate neighbourhood where they are produced.

The having a Canal crossing the Trust, ought to give much facility to procuring hard material from a distance.

Mr. John Moreton is clerk to the Trustees; and Mr. Powis is the surveyor upon this Trust;—both respectable and judicious persons.

BILSTON TRUST.

THIS Trust commences at Gibbet Lane, passes through the town of Bilston, Bradley, Moxley, and part of Wednesbury, to a place called High Bullen, being a distance of three miles and 1,260 yards; and there are other six miles one furlong in branch roads.

This road, passing, for the whole way, either among coal-works, or along the streets of towns, has a character different from the country parts. It is, at present, in a tolerably good state, but frequently, in bad weather, very much the reverse. It is generally made and repaired with cinders.

At Bilston a very essential improvement may be made by passing on the north side of the church, and across some level fields. This would require about 1,314 yards of new road, but would shorten the distance 426 yards, and avoid the long narrow street.

The ascent to the town of Wednesbury is long continued, and of course attains a considerable altitude. The rise is not inconveniently steep, but the whole direction is wrong, and creates an equal descent along the street of the town. This may be wholly avoided, and the road shortened by a new line, which would leave the present road near to where the Gospel Oak road turns off, and pass along the level ground to the south of Wednesbury. About one mile 1,408 yards of which should be made by this Bilston Trust.

The tolls for the year 1819, for the whole Trust, are let at 1,242 *l.*

From this remains to be taken, interest of mortgage debt, 114 *l.* 10 *s.* and for salaries 79 *l.* 16 *s.* which will leave 1,048 *l.* and in the proportion of this mileage of main road and branches, gives to the mail road 393 *l.* or about 106 *l.* per mile. This is a rate more than necessary for the mere repair, and therefore with the temporary increase of tolls, authorized by the Exchequer-Bill Act, and which, upon the mail line would amount to about 232 *l.*, funds might be immediately borrowed from that Board, to carry into effect both the proposed variation at Wednesbury, and that at Bilston; and as the tolls are at present very reasonable, this temporary increase for such useful improvements could not be objected to by any reasonable person.

Present Tolls:

For every horse drawing coach, chariot, &c.	3 *d.*
D° cart or waggon with six-inch wheels and upwards	3 *d.*
D° with wheels below six inches	4½ *d.*
For every horse not drawing	1 *d.*
For oxen, cows, &c. per score	10 *d.*
Calves, sheep, &c.	5 *d.*

The two improvements making together a length of 2 miles 962 yards.

The clerk to this Trust is Mr. John Willim, of Bilston.

The surveyor is Thomas Green.

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BIRMINGHAM AND WEDNESBURY TRUST.

THIS Trust commences at High Bullen, in the town of Wednesbury, and passes through the village of West Bromwich, and Handsworth, to the Shakspear Head Inn, on Constitution Hill, Birmingham; being a distance of about 7½ miles. This Trust includes other seven miles of branch roads, making together fourteen miles three furlongs seven yards.

From High Bullen the road descends along the Wednesbury-street, down to the Brook, which having crossed, it ascends at 1 in 14½, 16, and 22, to a village called Bromwich Hill Top. This portion of road, besides being inconveniently steep, is crooked, and much sunk into the ground. It is in working found to be one of the most serious obstacles upon the road. From the top of the Hill the road immediately descends very considerably. By continuing the improvement mentioned in the Bilston Trust, which leaves the present road near Bradley, and passing along the level fields through the sundry works, and ascending gently to the present road, where the road to Oldbury and Halesowen turns off, both the inconvenient hills of Wednesbury and Bromwich Hill Top would be avoided, and the general distance would be shortened about 1,042 yards; the distance to be made by this Trust would be about one mile 153 yards.

From the eastern termination of the proposed variation, the whole of the rest of this road is in a proper direction; it is of sufficient width, and the surface in good order; the only alterations to be wished for are in the neighbourhood of Soho and Hockley, where a little cutting down the heights and filling up the hollows would ease the present inclinations. The whole is repaired with field stones, which are laid down on the side of the road at from 2*s.* 6*s.* to 5*s.* for a ton of 18 cubic feet. But not having hitherto been broken sufficiently small, the road, although hard, is not smooth; many stones should be taken up and broken smaller.

	£.	s.	d.
The amount of the Tolls from 15 August 1817 To 15 August 1818 -	2,029	12	9½
Turnpike-house - - -	5	5	—
Cordley Machine, supposed -	28	—	—
£.	2,062	17	9½

Of this upon the Holyhead Road:

	£.	s.	d.	£.	s.	d.	£.	s.	d.
Soho Hill-gate - - - -	541	—	—						
Three Mile Oak Gate and Machine	364	11	2						
Half of Hill-top and Great Bridge-gate - - - - -	173	11	1						
D° Holloway Bank and Kingshill D°	192	—	—						
Cordly Machine - - -	28	—	—						
				1,299	3	—			
Interest of mortgage debt - -	145	—	—						
Salaries, Clerk and Surveyor -	130	—	—						
Sum - -	275	—	—						
Of this sum deduct two thirds from produce of Holyhead Road - - - - -				183	—	—			
This appears to leave for the Holyhead or Mail Road - - - - - - - - - - -							1,116	—	—
The contract for repairing the road, from High Bullen in Wednesbury, to the Shakespear Head Inn, Birmingham, exclusive of alterations and improvements, being about 49*l.* per mile - -							405	—	—
eaves applicable to improvements, or reduction of debts - £.							711	—	—

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The keeping the road in repair between Wednesbury and Soho is let by contract to Thomas Mason, and Job Jones; the remainder is also under contract to Samuel Holloway of Bromwich. The surveyor is James Bullock, of West Bromwich. The clerks to the Trust, Messrs. E. and S. Crowther, of Wednesbury. There has not hitherto been any regular and well-defined specification made out.

As the improvements in this Trust consist of the variation near Bromwich Hill Top and Wednesbury, and cutting down some heights, and raising hollows, near to Soho and Hockley, the above-mentioned surplus, and the powers granted by the Exchequer-Bill Act, of a temporary increase of Tolls, seem quite adequate.

BIRMINGHAM AND STONEBRIDGE TRUST.

THIS Trust commences at the point where the Coventry road separates from that to Oxford, and terminates at Stonebridge, being a distance of eight miles and three quarters.

From the commencement, this road passes over Bordesley Hill, with considerable ascents and descents, some as much as one in 22½, and with an absolute height of forty-three feet.

This hill may be wholly avoided, as well as the steep ascent up the present entrance into the town of Birmingham by the Bull Ring, which is at the rate of one in thirteen, and an absolute height of ninety feet; also the corresponding descent on the north side of the town by Bull-street and Snowhill. From the end of Watery-lane the road ascends up Brookhill, at 1 in 21½ for 517 yards. It is near the top of this bank that the proposed variation should take place, and pass, by a very regular descent of about one in thirty towards the canal, where Lawly Street and Belmont-row unite: the communication might then proceed to the bottom of Coleshill Street, along which the general entrance into the central parts of the town from the London road would be very convenient and easy. The Holyhead mail road might avoid the whole mass of hill on which Birmingham stands, by passing by this new line, and the top of Aston Street, and getting to the bottom of Snowhill by Bath Street, where a receiving-house for letters, connected with this mail, might be established. This would prove an important improvement to the general communication, and also to the improving that part of the town.

After reaching the top of Brookhill, the present line of road ascends gently to Smallheath toll-bar, and then descends equally easy to Hay-mill Bridge at the River Cole. In this distance the breadth of the road is generally forty-six feet between the fences, but this includes a footpath of about eight feet, leaving thirty-eight feet for the roadway and side drains. The road has lately been brought into a good form, having a gentle convexity in the middle, and being generally dressed down to the fence and footpath: some part of the side-dressing still remains to be performed. The workable part of the roadway has been repaired with screened or sifted gravel; the sides are formed and raised with sand and screenings. Mr. James Moore the surveyor has here bestowed much pains, and performed the work with judgment. I have only hitherto, on this District, further to advise, that the large stones which are in the gravel should all be separated and broken, so as not to exceed six ounces in weight, and be laid on the middle part; this, although requiring more labour in the first instance, will be found more effectual, and more economical.

From the River Cole to the road leading to Yardley Church, at the wheelwright's shop, the ascents and descents are generally easy, the width is sufficient; the surface of the workable roadway is in a good state; the sides are not yet completed, but are in progress. Mr. Moore found them very imperfect, and has been properly employed in filling up and shouldering.

From the last point, for 528 yards, the road is too narrow, being only twenty-eight feet between the fences, which includes the slopes of the dyke part, and the footpath, so that the workable part of the roadway is, in some instances, only twelve and fourteen feet wide. Here, therefore, widening to thirty-two feet, besides the footpath, should take place, and it should be made on the south side.

The surveyor says he has underdrained the present road; and there is plenty of good materials to be procured by the widening.

From this last point on to Well's Green Brook, the width is sufficient, excepting where two hills should be cut down, and there widening will be required. The descent, for 418 yards is 1 in 20½; this part of the road has been underdrained.

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From Wells Green Brook to Hatchford Brook, the width is sufficient, the inclinations are easy, the surface in a good state, but the sides want to be raised, and the footpath is imperfect. From this place to the Cock Inn the width is sufficient, the surface is good, the inclinations easy, but the sides want improvement. The trees are very injurious, and should be cut down; some lately planted should be removed.

From Elmdon to Law Brook the inclinations are easy, the general width is sufficient, but the workable roadway is too narrow; the sides, being upon clay and springs, require to be drained, raised and gravelled, and the banks of earth should be taken away.

From Law Brook to the toll-bar, and thence to Stonebridge, where this Trust ends, the width is sufficient, but there are sundry rather steep hills, and that next to the bridge called Diddington Hill is a long one, being about 500 yards. It would be a great improvement to remove the toll-bar and cut down this hill; the hollow to the west of the toll-bar should be raised.

In the course of this road four new cross drains are wanted; they should be made each two feet diameter. Along nearly the whole of this district the hedges are too high, they should not be more than four feet above the roadway. The trees are also very injurious. The statute-duty amounts to very little.

This road is repaired partly with field stones, but chiefly with gravel, which is upon the whole plentiful, and not inconveniently situated. It is recommended to bestow more labour and expense in cleaning the gravel; where water can be had conveniently the most effectual way is to wash it.

	£. s. d.	£. s. d.
From Mr. Moore's very distinctly detailed statements it appears, that in the year 1818, the expense for gravel was - - - - - -	313 12 11½	
Ditto for labour - - - - - -	199 19 —	
		513 11 11½
The expense for labour and gravel appears to be, 58 *l.* 12 *s.* per mile		
Salaries and interest of money - - - - - -		435 — —
Total Expense - - £.		948 11 11½
The rent of the tolls from Michaelmas 1817 to Michaelmas 1818, was - - - - - - -		1,210 — —
Sum applicable to improvements or reduction of debt - - £.		261 7 1½

The Rate of Tolls by the Act of 1794:

	At Smallheath Gate.	At Diddington Gate.
For every coach, chaise, &c. drawn by three or more horses -	18 *d.*	18 *d.*
D° - - - - by two - - -	9 *d.*	9 *d.*
D° with four wheels - by one - - -	6 *d.*	6 *d.*
D° with two wheels - by one - - -	4 *d.*	4 *d.*
For any horse not drawing - - - - - - -	1 *d.*	1 *d.*
For oxen, &c. per score - - - - - - -	10 *d.*	
For calves, sheep, &c. - - - - - - -	5 *d.*	
For every waggon with six-inch wheels, or under -	18 *d.*	12 *d.*
cart with two wheels above six inches -	12 *d.*	6 *d.*
D° - D° - - - - - -	9 *d.*	

These tolls, with a temporary rise as authorized by the Exchequer Bill Act, seem therefore adequate to defray all the improvements here proposed.

Mr. James Moore, is the surveyor upon this road.

Mr. R. W. Gem, is clerk to the Trust.

STONEBRIDGE and DUNCHURCH TRUST.

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Mr. Telford's Report on the English part of the Holyhead Road.

THIS Trust commences at Stonebridge, passes through Meriden and Coventry, and terminates at Dunchurch; in all a distance of 19 miles, besides the town of Coventry.

From Stonebridge to Meriden the widths are 34, 36, and 54 feet, between the fences, but this includes a footpath and side drains. The ascent from Stonebridge is one in 24 for 121 yards, all the rest is easy. The surface is in a pretty regular state. It is repaired with gravel from an adjacent common, distant about 500 yards. This gravel is of a tolerably good quality, and of equal size, the cleansing of it effectually cannot be too much recommended. And to render this part of the road (which is now heavy) sufficiently firm, substantial, and easily maintained in a proper state, the whole on the western side of the hill should be re-constructed with a bottoming of hard sandstone, which may be procured along the sides of the road; this should be carefully laid by hand as a pavement, none of the stones to be more than five inches wide on the face; they may be eight or nine inches deep; the upper surface brought into a regular even plane, and upon this a bed of well cleansed gravel, about six inches in thickness, should be laid; this gravel should be cleared of all stones above an inch, these should be broken into less than six ounces weight, and then mixed with the gravel. This part of the road is very much incommoded with large oak trees, which overhang and shade it; they should be cut down.

The descent to the village of Meriden might be much improved by cutting down a little on the upper part of the hill, and raising the road through the village. The footpaths might, in many instances, spare two or even three feet from the breadth, which might be added to the roadway.

The hill immediately east of Meriden is inconveniently steep, the ascent on the western side being one in 12 for a considerable distance; the absolute height from the village is 106 feet; the top of the hill is flat for a considerable way, and the descent on the eastern side is long continued. By carrying a line along the northern side of the hill a more gradual inclination might be obtained on both sides, but the absolute height would not be lessened, and a great distance of new road making would be incurred. And this absolute height could not be avoided without a very considerable circuity and lengthening of the line. Every mode hitherto proposed of cutting down the present road seems objectionable; and I have not yet been able to fix upon any satisfactory mode of improving this place, but the obstacle to travelling is so serious as to demand further investigation; and this re-survey will be extended to Pickford Brook.

From Pickford Brook bridge to the brook east of Allesley, the breadth between the fences is sufficient.

The inclinations, though long continued, are easy, and if the surface is kept smooth with hard materials, it will be sufficiently commodious. The surface of the road is generally below that of the adjacent fields; and the fences and trees, by standing on the high banks, exclude the road from sun and air. These should be removed, the banks sloped down, and the fences placed at the bottom of the slopes.

To the eastward of Allesley the road between the brook and the village should be raised: this may be done by earth cut from the sides of the road, or taking it from the great hill which is to the eastward.

From Allesley Brook to the western entrance into the town of Coventry, the road is of sufficient width, and the surface is, in general, good, but the general direction is circuitous, and passes over a considerable mass of hill; a very desirable improvement might be obtained by passing along the northern side of this hill; the road would be nearly level, it would be shortened about a furlong, and 40 feet of absolute height would be avoided. Another very important improvement might be obtained, by continuing this new line across the western suburb of Coventry, and passing through fields on the south side of the town, in nearly a straight and level line, to the bend which the road makes at the Sherbourne Brook: by this change, all the narrow streets would be avoided. This line has been surveyed.

From Meriden to Coventry the road is repaired partly with field stones or pebbles, and partly with gravel: the selection and breaking of the stones should be carefully attended to: the sides of the road might be shouldered with softer sandstones. Mr. Astley the surveyor has bestowed pains to bring the road into a

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proper shape, and has to a certain degree succeeded, but much still remains to be done. In this last distance some trees incommode the road.

From the eastern extremity of the town of Coventry to the bottom of Knightlow Hill, the road passes over a succession of small heights and hollows, which might all have been avoided; but the inclinations, although considerable, and some of them long, may, by making the workable roadway of hard materials, and keeping the surface smooth, be rendered sufficiently commodious. In this distance, trees, &c. &c. injure the road. The width of the roadway near Lord Hood's Park is only 28 feet between the fences, and this is including a footpath, which is placed on the wrong side. If it was on the south instead of the north side the workable part of the road-way would have more benefit from the sun and air.

Knightlow Hill is a long-continued and very heavy ascent, being one in 18 for near 400 yards. This should be eased, by cutting down about 10 feet at the summit, and filling up nearly an equal height at the bottom of the hill.

From this place to Dunchurch, the road passes in a good direction, but this being between two rows of lofty trees is greatly injured by them. Those on the south side should be cut away, and the branches should be lopped from those on the opposite side.

From Coventry to this place, the road being upon a loose sand, and repaired with weak gravel, is in general very heavy. This is only to be remedied by forming the middle or workable part of the roadway with stones, or metal, broken to six ounces in weight, and these may be had by the Canal: if the cross section was brought into a proper shape, and made, and continually repaired with these stones, this part of the road would in a short time become hard and smooth, and be equally remarked for its lightness, as it has hitherto been for heaviness of draught for horses.

	£.	s.	d.
The expense of keeping this road in repair, with the improvements which have been made, upon an average of four years, ending 7th June 1817, was - - - - - - - -	1,435	15	6¾
Or about 75*l.* 12*s.* per mile.			
Salaries, and interest of debt, also contingencies - - -	184	7	—
	£. 1,620	2	6¾
The value of Tolls upon an average of four years, ending the 7th June 1817, was - - - - - - - -	1,601	19	6
Deficit - -	£. 18	3	—¾

RATES OF TOLLS:

For every coach, &c. &c. drawn by six horses - - - -	24 *d.*
D° - - - - by four D° - - - -	18 *d.*
D° - - - - by two or three D° - - -	12 *d.*
D° - - - by one D° - - - - -	6 *d.*
Waggon, with wheels 16 inches abroad - - - - -	12 *d.*
D° - - 9 inches - - - - - -	24 *d.*
D° - less than 9 inches, drawn by 6 or more horses, &c. -	24 *d.*
D° - - D° - - - by 4 horses - - -	20 *d.*
D° - - D° - - - by 3 - - - -	16 *d.*
D° - - D° - - - by 2 - - - -	10 *d.*
D° - - D° - - - by 1 - - - -	6 *d.*
Every horse, &c. laden or unladen - - - - - -	1 *d.*
Drove of oxen, per score - - - - - - -	10 *d.*
D° - calves, sheep, &c. - - - - - - -	5 *d.*

From the foregoing statement it will appear that the income of the gates is scarcely equal to the present rate of expenditure; but for this sum of 75*l.* 12*s.* per mile the road ought to be kept in good condition, and the minor improvements performed. The tolls now levied are higher, in most articles, than any of the other Trusts hitherto reported upon; and as the necessary improvements at Meriden Hill and Knightlow Hill would, if carried into effect, incur a very considerable expense, it is questionable

questionable whether it would be advisable to advance the tolls under the Exchequer Bill Act for that purpose, or provide other funds.

Mr. Woodcock is clerk, and Mr. Astley, surveyor to this Trust.

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DUNCHURCH and STRATFORD TRUST.

Total Length 29 Miles.

FROM Dunchurch to Willoughby the breadth between the fences is 60 feet, but the roadway is narrowed by a footpath and ditch on the north side, and on the south side by another ditch and road scrapings, so that the real roadway is not so much as 40 feet feet in breadth. The space of 40 feet is generally concave, having water running in the middle of the roadway, and it is also cut into ruts. The workable road is frequently not above 13 feet in breadth. The sides of the roadway are in general mere puddles, which prevent the water getting off, whereas if the roadway was properly formed there would be sufficient opportunities of keeping it dry. Excepting the descent from Dunchurch, which is one in 18 for 66 yards, one in 15 for 55 yards, and one in 21 for 131 yards, the other inclinations are sufficiently easy. The material used is chiefly gravel, which is in general soft pebble stones mixed with some larger, the latter are laid into the ruts in their round state, and so tumbled about by carriage wheels. These, if properly broken very small, would afford good top-metal, and they should be carefully used for this purpose only; but having been all laid on promiscuously, in small quantities at a time, they have been mixed and lost in the before-mentioned mud.

At Willoughby there are several gravel-pits now in work, partly for the mail road, and partly for the adjacent township roads. Much of this has been passed once through water, and through a fine sieve, which leaves the whole in a very soft imperfect state; it is in this way procured for 1*s.* 6*d.* per cubic yard. Of late, that is since last November, William Milne has washed and passed his gravel twice through a sieve; this has produced a much better road material than has been employed before. He gets it in his own land, and sells it at 2*s.* 4*d.* per cubic yard. He also carries it to the road at from 8*d.* to 1*s.* 6*d.* per cubic yard, according to the distance. But unless the roadway is thoroughly cleaned of mud, and a sound bottom prepared, this extra labour in the gravel will be lost. The most advisable mode would be to procure rag or lime stone by the canal, and with it construct a substantial roadway, say 18 or 20 feet in breadth, and six inches in thickness, and upon that use this gravel after it has been cleansed of all stones above one inch diameter. All above this size should be broken, and then, when mixed with the other gravel, would tend to fix and bind it. The sides of the road, after being properly formed and sloped, might be covered with the smaller sort of gravel. In order that the road may be readily kept dry, the side ditches should be constantly kept perfectly clear, with a free discharge into the field ditches, which, if necessary, should also be cleared, so as to admit the water to pass off freely. In sundry places cross drains under the road are much wanted, in order that the water be prevented from running far along the road. I am sorry to observe that this part of the road appears to have been much neglected in all that regards care and practical skill. This will be evident to any person who will compare it with the Trusts to the westward of it between Dunchurch and Birmingham.

From Willoughby to the Oxford Canal the road is in a similar state with this last described District, and of course similar observations will apply to it.

From the bridge over the first bending of the Oxford canal at this place, the road descends into low flat ground, at one in sixteen, it then ascends Braunston-hill, at the average rise of one in fourteen for 495 yards, of which there is one in eleven for 121 yards. After having ascended the first part of the hill, the road for a considerable way continues nearly level, and then again ascends at one in nineteen, and afterwards by easier inclinations: the greatest absolute height above the low ground at the bridge is 253 feet. From the before-mentioned summit the road descends for some distance, and then ascends to the Windmill public-house, at the rate of one in twenty-six for 198 yards, it then descends to the hollow at the western entrance to Daventry.

The descent to, and ascent from, the Oxford Canal, is inconveniently steep and long continued; but, as the great mass of hill projects only about one quarter of a mile to the southward of the present road, the steepest part of the rise may be avoided, by leaving the road about one quarter of a mile west of the first bend of the Canal, and after crossing the low ground and second reach of Canal, then carry the

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the new line round the southern shoulder of the hill, and so as to join a part of the second ascent. By this means the descent to the low ground would be at the rate of one in 30. The ascent over the canal may be made one in 26, and that only for a short way. The rises then are, one in 66, one in 33, 30 and 34, all sufficiently easy. Having accomplished this part of the ascent so easily, renders it unnecessary to take the rest of the road out of the present straight direction. I had a line surveyed along the north-eastern side of the hill towards Daventry, but it was circuitous and expensive, and, upon the whole, did not seem advisable: but along the present road, although the width between the fences is frequently about 60 feet, yet the real workable roadway is confined in a sunk channel about 25 feet in width, and this width has a concavity of about six inches. On the north side there is a footpath about two feet above the level of the road; on the south side banks of scrapings are formed into mounds, about six feet in height, and fully 14 feet wide at the base. Between this mound and the fence there is a space of about 10 feet. Of the 25 feet of roadway, about three feet on each side was covered with recent scrapings, leaving only a workable roadway of about 19 feet. The surface of the road is about two feet below the surface of the adjacent fields on the south side; the hedge on this south side is high, and there are many trees which overshadow the road.

From this detail it will be evident that much reformation is necessary; indeed, it is not possible to conceive a public road to be in a more imperfect state. To bring it into a proper state, the hedge and trees on the south side should be cut down; the great banks of scrapings should also be cleared away, excepting as much as are necessary to construct a footpath along the south side; the roadway should then be formed for about 32 feet clear of the footpath, into a cross section, with a very gentle curve in the middle; about 20 feet in breadth should be made of hard metalling, about 12 inches in depth, the side shouldering may be formed with scrapings, covered with gravel, with proper side and cross drains, and as the ground on the north side is generally lower than the road, the water might readily be conducted clear off. It will also be necessary to ease some of the declivities; but as there is here a difficulty of doing this to any great extent, it is the more necessary to have the surface of the road hard and smooth. Without changing the situation of the road for many miles, and avoiding the town of Daventry altogether, I conceive the foregoing propositions for improvement are what should be adopted.

In entering the town of Daventry the ascent is much too steep, being about one in 16 for about 220 yards; as this cannot be altered much, without greatly incommoding and endangering the houses on each side of the street, and a heavy carriage coming down so steep a pavement subjecting the traveller to much risk, I advise that this part be constructed and repaired by stones broken very small.

From Daventry to Weedon, the breadth between the fences is frequently from 50 to 60 feet, but of this the road does not occupy one half, the remainder being filled by banks of scrapings, and a footpath, the latter, as usual, is on the north side, and banks of scrapings, from two to four feet high, on the south, or sunny side. Besides confining and shading the road, these large banks of scrapings occupy the part of the road upon which droves of cattle ought to travel, and being deprived of this they are forced into the middle of the carriage-way. There are here also tall trees which shade the road, they should be cut down. Similar operations are required through this District, as have been described for that to the west of Daventry. The ascents and descents between Daventry and Weedon are as follow; one in 18¼, for 132 yards; one in 20¼, for 154 yards; one in 23, for 132 yards; one in 15, for 55 yards; one in 18¼, for 429 yards; one in 12½, for 132 yards; one in 21½, down to Weedon for 220 yards. Over the whole of this distance the surface longitudinally is a waving line, and the inclinations are frequently too steep.

From the low ground near Weedon to Foster's Booth, the road passes over a succession of hills and deep ravines: the first steep ascent is one in 17 for 121 yards, and one in 16 for 275 yards; the absolute rise is here 140 feet perpendicular; from this summit there is a descent of one in 19 for 330 yards, and a fall of 70 feet. There is next an ascent of one in 14½ for 391 yards. The absolute height of the summit at the Angel Inn, commonly known by the name of the Dirt-house, is 188 feet above the low ground at Weedon. After passing this summit, the road descends to Stow Brook, at Goose Bridge, at one in 20 for about 680 yards. After crossing the brook, the road ascends by 1 in 11¼ for 66 yards, one in 20 for 66 yards, one in 21 for 418 yards, having risen 187 feet above Stow Brook, and 225 above the low ground at Weedon; from this summit it descends at 1 in 27 to Foster's

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Foster's Booth. From Foster's Booth to the town of Towcester the road descends by an irregular surface, with some inclinations of one in 20 and 22, and with a total fall of 189 feet. From Weedon to Towcester the width between the fences is generally sufficient, being upwards of 60 feet; but in several places it is under 30, and in the deep cut on the hill-face to the east of the Grand Junction Canal, near Weedon Valley, it is only 22 feet between the skirts of the banks, and these banks are about 20 feet high. Between Foster's Booth and Towcester the road is confined to 20 feet in breadth by scrapings, which are, in some instances, six feet high, thus constituting a narrow channel. In sundry places the fences and trees on the south side are very injurious.

The materials employed between Daventry and Towcester are gravel, limestone, and sandstone. The gravel is of a very inferior sort, being much mixed with red earth and sand; it is got in the parish of Hayford, near Daventry, at 10*d.* per cubic yard. This gravel ought to be cleaned by washing, the different sizes separated, and the large stones carefully broken. Near Weedon there is a weak gravel close by the road; near to Green Norton there is gravel half a mile from the road. Limestone is got near to the Dirt-house, and near the road; also, a little way from Foster's Booth, about a furlong from the road, it is got at 20*d.* per cubic yard. The depth of good stone is about two feet, and there is one foot six inches of softer sort. It is also got, near the road, at the Rose Inn, at 21 *d.* per cubic yard, but it has here from 12 to 15 feet of cover on it. There is also some near Duncot-lane, about half a mile from the road; it has 15 and 16 feet of cover; it is got at 20*d.* per cubic yard. The stratum is only 20 inches in thickness.

The road is in general concave, and, excepting on the steep banks, water lying on it. There appears to be very few cross drains. The water is let off by openings cut through the footpaths and the banks of scrapings. There is seldom any appearance of side drains, or any pains to keep the road dry, or of a regular shape.

From the foregoing statement it appears that the whole of the road in this District requires amendment, and for a considerable part of the way, a total change of line seems the only remedy. I caused a line to be surveyed to the southward of the present, but unless, upon a further examination, sundry objections can be obviated, this line, which appeared generally promising, does not seem advisable: it is probable that considerable improvements might be made by keeping to the eastward of the present line. This part of the country being very hilly, considerable difficulties occur in laying out a good line of road, without greatly increasing its length; further examinations and reasonings are therefore necessary to enable me to give a decided preference to change or improvements here.

From Towcester to Plump Park corner, the road at first ascends at one in 12 ½ for 44 yards, and it is only 28 feet in width. This place ought to be improved by widening on the north side, and filling up the hollow. Farther on the roadway is only 22 feet wide, with a footpath of seven feet: here there is plenty of waste land on both sides of the road to admit of widening to 32 feet, besides the footpath. Opposite Yeoman's Inn the road is only 22 feet, and a six-feet footpath. At the Heaven-Cot Cottages it is of the same width; it is also too low; here, therefore, both raising and widening are required. From the foresaid cots, to a little way east of Cuttle Mill, the width is sufficient. On ascending the hill to the eastward it is only 18 and 24 feet, and the surface is frequently from four to five feet below that of the adjacent fields. In regard to the inclinations, the ascent from Towcester Toll is in one place one in 21 ½; it is afterwards a very gentle rise to the hill-top. The descent to Cuttle Mill is on an average one in 14 for 282 yards; but in some parts of this it is one in nine; is also inconveniently steep for about half way up, on the eastern side of the dingle; the rest is sufficiently easy. The passing this dingle forms a serious obstacle, and may readily be remedied, by making about three quarters of a mile of new road to the south of the present one: this would render the inclination on each side of the dingle very easy.

From Plump Park corner, to the termination of the Trust at Old Stratford, the space between the fences is, in general, about 60 feet, but the roadway is confined to the narrow space of 20 and 22 feet; this should be widened, and made straighter, and would produce material to fill up sundry hollows, some of which require from three to five feet; the banks of scrapings should be applied to the same purpose. In sundry places, the hedges and trees on the south side of the road should be cut down. The cross sections of the road are here not very exceptionable, but the shouldering requires dressing, and the side drains clearing out. The stone metalling of the middle part is much too narrow. A very considerable quantity of

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stone was lying along the sides of the road when I made the last inspection, and part of it broken, but not sufficiently small. It is all a lime-stone, generally procured within half a mile of the road; the stratum is from 18 inches to four feet in thickness, and lying under a cover of from six to eight feet. It is got at from 9*d.* to 12*d.* a cubic yard.

The Tolls upon this Trust are

For a chaise, &c. drawn by one pair of horses	12 *d.*	Double Tolls on Sundays.
- - D° - - - - - - two - D°	18 *d.*	
For a narrow-wheeled team, per horse	6 *d.*	
A six or nine-inch D° - - D°	4 *d.*	
Saddle-horses	1½ *d.*	
Oxen, cows, &c. per score	15 *d.*	
Sheep and pigs, &c. D°	6 *d.*	
Coach and six horses - - - - - - each	24 *d.*	
Common stage waggon with six horses - D°	24 *d.*	

From Dunchurch to Old Stratford, there are two surveyors; viz. Mr. Upton of Charleton for the western, and Mr. Gurdon of Towcester for the eastern division. Mr. Edward Burton is clerk to the Trust.

	£.	s.	d.	£.	s.	d.
The produce of the tolls, as stated in the return to the Committee of Parliament, and dated 15th May 1817, for the then last year, was				3,372	—	—
The annual expense of the road, upon an average of two years, ending April 1817, was	2,697	12	—			
Or 93*l.* per mile.						
Interest upon debt	210	—	—			
Salaries 155*l.* but as there are now two surveyors, or, to pay one good one	200	—	—			
				3,107	12	—
Surplus			£.	264	8	—

From this statement it appears that the Tolls are now above the average rates hitherto met with, and therefore it cannot be deemed advisable to increase them under the Exchequer-Bill Act, for meeting the expense of necessary variations. But there appearing to be an ample fund for paying at the rate of 93*l.* per mile, the public have certainly a right to expect that such of the present road as may be retained be improved and maintained in a perfect condition, instead of being, as it is at present, the worst of any upon this great road. This distance might afford to pay one respectable surveyor, who should devote his whole time to this 29 miles of road. Specifications should be made out annually, and the work let by contract, and the whole put under the management of an effective committee of not more than five persons.

STRATFORD and HOCKLIFFE TRUST

Consists of 14 miles.

FROM Stoney Stratford to Shenley the width between the fences is ample, and the inclinations are in general, easy, only some hollows should be raised from two to four feet. In order to get material for this, some angles should be cut off, and the banks of scrapings made use of. Some parts of this road is open, in others there are hedges and trees which should be cut away. The surface of the road has, in general, a good shape, but the stone metalling being only from 12 to 15 feet in width, is too narrow; it should be extended to 18 feet, and have proper shouldering and side drains, which might be made with the inferior sort of materials, say small gravel. There is limestone in pits, several of which are near the side of the road: it lies under from four to five feet of cover. The upper part of the stone, for three feet in thickness, is of inferior quality, and is chiefly carried to the bye roads; some

some part is taken to the mail road. The lower stratum of about two and a half feet in thickness is of a hard quality, and taken wholly to the mail road; it is got at from 10*d.* to 12*d.* per cubic yard, and is carried to within eight miles of the eastern extremity of the Trust, that is to say, about six miles are repaired with it.

A considerable quantity of stone was raised at the pit when I made the inspection, and also laid along the road side; some part was broken into a tolerably good size, but if it was smaller it would be still better.

From Shenley, through Fenny Stratford, to Brick-hill Church, the space between the fences is of sufficient width, being from 47 to 70 feet, excepting near Shenley, where the road is crooked, and only 26 feet in width, and is sunk too low; it should be removed into a more direct line on the higher ground on the south side.

As far as Fenny Stratford the inclinations are sufficiently easy, excepting for short distances; they are from 1 in 19 to 24, but these may be remedied at a small expense, by filling up hollows. From the street of Fenny Stratford there is a descent of 1 in 17½, and 22, down to near the Grand Junction Canal Bridge: This should be improved, by raising the ground near the bridge. From this bridge the descent is already rendered easy, by a very considerable embankment across the valley: the road then ascends at the rate of 1 in 62, for 1,056 yards, 1 in 32½ for 759 yards. In this last length the road has been raised in the middle, but it being only for about 16 feet in breadth, from which the sides slope so rapidly as to render the place very dangerous, the sides being not less than 3 feet below the mound, which constitutes the workable roadway in the middle; passing onward, the ascent is at 1 in 13 for 264 yards, and 1 in 33 for 900 yards to the town of Brickhill. These 264 yards, at the rate of 1 in 13, make a distressing pull for loaded carriages; this ought to be improved. A line, not exceeding 1 in 30, might be carried round the southern side of the hill upon which the town of Brickhill stands, but, in this direction, from the unevenness of the ground, the road would be circuitous and expensive, and no part of the real summit would be avoided. But an ascent of 1 in 21, (the same as the best part of the late improvements at Chalk hill,) might be obtained, by making a new line from the western end of Brickhill Street, upon the ground, in the fields on the north side of the present road, and if this was constructed with hard materials, the ascent not being for a great distance, and having flat ground immediately above it, would be a great accommodation.

The last four miles next Brick-hill are repaired generally with gravel, got by permission from an adjoining parish. It is got at 16*d.* per cubic yard, and carried from 2 to 3 miles for 2*s.* 3*d.* per cubic yard; what was lying upon the sides of the road was much mixed with earthy matter and large stones; if it had been well sifted, or even washed at the pits, much carriage would have been saved, and as a road material it would have been more suitable; the large stones should have been separated, and broken small for top metal.

From Brickhill the road ascends gently to the summit near Mr. Duncombe's entrance gateway, it then descends equally easy for some distance, and again ascends another small hill; it then descends more rapidly, that is, at 1 in 28 for 650 yards; it afterwards proceeds over several small heights and hollows to the bottom of a very considerable hill: thus far improvements may be accomplished by small cuttings and embankments. But the road next passes over a hill of more serious magnitude, its absolute height above the surface of the road, in the hollow on the east side, being 94 feet, and the rates of ascents and descents being in sundry instances, 1 in 17 and 12½, and the latter for no less than 319 yards. From this hollow the road immediately passes over a small eminence, and then encounters another large hill, where the ascent is 1 in 19 for 524 yards, and descends by 1 in 14 for 363 yards; in both these averages there are much steeper inclinations, and the absolute height above Hockliffe bridge is 130 feet, and above the hollow on the west side of the hill 116 feet. These last two hills may both be avoided by a line carried on the southern side of them, as nearly on a level as advisable, to keep the roadway dry; the length of new road to be made would be about 2½ miles, of which about a furlong would be along the road to Oxford, and three furlongs along a parish road. This improvement would be still more perfect if carried a mile farther, as shown by dotted lines upon the plan.

From Brickhill to near the 41 mile-stone from London, the roadway is 32 feet in breadth, and it is 60 feet between the fences. From this point to where the Woburn road turns off, the workable roadway is only 20 feet, although between the

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fences it is 54 feet; the roadway is here raised too much in the middle: from this to the bottom of the before-mentioned first great hill, the width of roadway is from 28 to 30 feet, there are no fences near it.

Thus far the surface of the road in sundry places is rendered scarcely workable, by being raised too high in the middle, the sides being much too steep; it is also occasionally injured by trees on the south side. The gravel-heaps lying on the sides of the road are mixed with earth and large stones; it should be washed and screened. In sundry places banks of scrapings are four feet high; these should be removed to fill up hollows upon the road.

The Tolls upon this Trust are

Chaise and pair	12 *d.*	No additional Tolls on Sundays.
D° - four	18 *d.*	
Four-horse team, narrow wheels	27 *d.*	
Eight-horse waggon, 9-inch ditto	28 *d.*	
Cows, oxen, &c. per score	12 *d.*	
Sheep, pigs, &c. ditto	5 *d.*	

Mr. Salter, of Stoney Stratford, is surveyor from Stratford to Brickhill; from Brickhill to Hockliffe, Mr. Reddal is surveyor.

Mr. I. F. Congreve is clerk to this Trust.

		£. s. d.
The amount of tolls, as stated by surveyor		1,743 — —
Amount of expenses upon the road	£. 1,500 — —	
(N. B. No particulars.)		
D° - interest of money, salaries, &c.	146 — —	
		1,646 — —
Surplus	£.	97 — —

From this statement it appears that, at the present rates of tolls and expenditures there is only a surplus of 97 *l.* But the present expenditure of 107 *l.* per mile appears sufficient to keep the road in good order, and there is still 7 *l.* per mile to be applied to the minor improvements, as widening where necessary, filling up small hollows, putting in cross drains. The tolls are already rather high, and therefore raising them under the Exchequer-Bill Act would operate very heavily upon the travellers; for the important improvements at Brickhill and Hockliffe some other mode must therefore be devised to obtain the necessary funds.

HOCKLIFFE TRUST.

The Length is only four miles and a quarter.

THIS Trust commences near the northern end of Hockliffe, and terminates at the northern end of Dunstable. The breadth near the Hockliffe toll-bar is only 22 feet clear of the footpath; at other places it is 34. Upon the top of the mound at Chalkhill, the breadth is 34 feet; in the deep cut it is from 24 to 26 feet; in other parts it is from 40 to 60. The inclinations from Hockliffe to the bottom of Chalkhill are very gentle: in the great embankment lately made the ascent is about one in 21 for 319 yards; in the deep cut it is one in 18 for 429 yards, the top part is one in 25 for 154 yards. From the top of the hill to Dunstable the inclinations are very easy, the greatest being one in 40. The surface of the road is all in a comparatively very good state, except a small part, where the sides are too steep, and in other parts the road lies too low. These require to be remedied.

From Hockliffe, for more than half the length of the Trust, the material is gravel, which is carried nearly three miles; the getting and sifting costs 18 *d.* per cubic yard; carrying to the road 2 *s.* 6 *d.* What of this gravel was lying on the side of the road was well cleansed. For the rest of the Trust flints are procured from the distance of about three miles to the south of Dunstable, they cost, in picking off the fields, including damages, about 2 *s.* per cubic yard, and for carrying to the road,

road, about 3*s.* more, making 5*s.* per cubic yard delivered on the road. The flints were broken sufficiently small. A piece of road, a little to the east of Hockliffe toll-bar, has lately been brought into a very perfect shape, only the side ditches are rather too deep: it has about 24 feet of workable roadway. Upon the whole, Mr. Key Hardie, who has the management of this piece of road, deserves much credit for the state in which I found it.

From Hockliffe, for a short distance east of the toll-bar, there are trees on the south side which injure the road. At the commencement of the embankment of Chalkhill there has lately been (for about half a mile in length) a belt of trees planted along the south side of the road; they should be removed: the rest of the tract is clear.

Tolls taken upon this Trust:

			T. Cwt.	T. Cwt.
Chaise and pair of horses - - -	9*d.*	Summer,	3. 10.	Winter, 3. 0.
D° - four - ditto - - -	18*d.*			
D° - six - ditto - - -	24*d.*			
Teams and waggons with narrow wheels, and 3 or 4 horses each team -	18*d.*	D° -	6. 0.	D° - 5. 10.
Nine-inch wheels with 8 horses -	24*d.*			
Cattle, oxen, &c. per score - -	10*d.*			

Double Tolls are charged on Sundays.

	£.	s.	d.	£.	s.	d.
The amount of Tolls is - - - - - - - - -				1,910	—	—
Average expense of road repairs for four years - - - - - -	777	2	1			
Interest of money - - - -	342	—	—			
Salaries - - - - - - -	130	—	—			
Incidents, say - - - - -	20	—	—			
				1,269	2	1
Surplus - £.				740	17	11

This trust is therefore amply provided with funds, for, with the expenditure at the rate of the last four years, viz. about 182 *l.* per mile, every desirable improvement may be accomplished. The debt may be paid off, and then, for the general good, this short productive Trust ought to be united with the last Trust, which produces less revenue upon fourteen miles than this does upon 4½ miles. The trustees deserve great praise for the very arduous work accomplished at Chalkhill, which, if kept equally hard and smooth as at present, will be found tolerably commodious.

DUNSTABLE TRUST.

The Length of the Trust is Twelve Miles.

IT commences at Dunstable, and terminates at a mile west of St. Albans; the road is generally of a good width, being upwards of thirty feet, excepting in one place, where it is only twenty-seven feet. The footpath is here on the south side, which is its proper situation, as it places the workable roadway at a greater distance from the south fence, and it is of course less shaded. The surface of the road is in a good state; near the toll-bar it is sunk too much below the adjacent fields, and the north-side requires to be cleared out. The inclinations are in general easy. At the twenty-seventh mile-stone the road is occasionally covered with water; the hill to the westward is of considerable height, and steepness of ascent; this should be remedied, either by raising the valley, or taking a new line to the southward; the last mode would be the most effectual, because it would avoid about fifty feet of absolute height, and also take off the steep part of the ascent on the eastern side of the valley.

The hedges on the south side of the road are generally cut down very properly, and there are very few offensive trees, excepting near Redbourne.

The materials used are flints, with a slight covering of gravel; those recently laid on the road had many too large amongst them.

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Through the whole of this Trust, the general soil of the country is much more favourable for roads than those Trusts lately passed through, which are generally upon retentive clays or marles, where every rut or footstep retains the water. Nothing renders the contrast more evident than the gateways, or entrances to fields, which, in the former Trusts, east of Duncburch, are, in wet weather, scarcely passable; whereas, in the Dunstable Trust, all is clean and covered with grass; every part of the surface, not only of the road and side-drains, but of all the adjacent fields, dries immediately after rains; whereas in the before-mentioned districts the clays mix with the stones and gravel, and render them non-effective. It is therefore by thick beds of good materials only that a good road can be there firmly established.

In light dry soils more superficial coating will be equally effectual.

Notwithstanding these advantages, great praise is due to Mr. Stokes for his good management of this District, which, in many respects, may be offered as a model for others.

Tolls taken on this Trust:

Chaise and pair of horses			9 *d.*
D° or coach and four D°			18 *d.*
D° - - D° - six D°			24 *d.*
Teams with narrow wheels, and three or four horses			24 *d.*
D° nine-inch D° and eight horses			15 *d.*
D° six - D° and six - D°			15 *d.*
One-horse cart			4½ *d.*
Saddle-horse			1 *d.*
Cattle, per score			10 *d.*
Sheep and pigs			5 *d.*
		£. *s.* *d.*	
Amount of tolls upon lease			1,805 — —
D° of interest upon debt	£. 255 — —		
Salaries	130 — —		
			385 — —
Said by the clerk, Mr. Story, to be expended on the road			1,420 — —

This rate of expenditure, of about 118*l.* per mile upon this favourable soil, seems quite adequate to all the necessary improvements; and if the trustees continue to encourage Mr. Stokes in his laudable exertions and zeal, I have no doubt but all this will be accomplished; for, from the return of the Committee to the House of Commons in 1817, it appears that the increase of number of loads of materials laid upon the road, between the years 1813 and 1816, was 2,319 loads, or almost 200 loads per mile annually.

ST. ALBANS and SOUTH MIMS TRUST.

The Length is 11 Miles and 374 Yards.

FROM the commencement at the Pond Yards, to within half a mile of the town of St. Albans, the breadth of the road is 36 to 39 feet between the fences, and the roadway is about 30 feet; near to St. Albans the roadway is from 22 to 28 feet; it there occupies the whole space between the fences; the narrowest part is unluckily sunk from three to six feet below the surface of the fields; but the surface, from the commencement to St. Albans, was all found in a smooth state, and it is worth remarking, that the same sort of favourable soil has hitherto continued. The before-mentioned narrow part of the road should be widened to at least 30 feet of clear roadway, and the fences kept low. The general inclinations have to this place been very easy.

Through the town of St. Albans the ascent is inconveniently steep, being one in 14½, for 110 yards; one in 12, for 87 yards; and one in 14¼, for 55 yards. This being along the main street cannot be much improved without an evident injury to most of the houses. Much of the southern face of the hill is also covered with houses and gardens; much valuable property must be cut through and deranged, in order to place the line of road in the direction most favourable to the traveller. In regard to the general travelling, it is much to be regretted, that instead of the new line which has lately been opened to the eastern entrance into the town, at a very considerable

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considerable expense, that the old road had not been improved, and carried on by the White Hart Inn, and by the south side of the Abbey Church, so as to meet the northern part of the street in nearly a straight line. The general direction would here have been good, and the inclination sufficiently easy; the difference of level between the extreme points is only 33 feet. There being now no prospect of this improvement being made, I mention it merely as a caution to those engaged in alterations near towns, that they may be on their guard against local interests and prejudices, when general accommodation ought to be the leading object. As the case now stands, all to be expected is, that the lower part of the steep hill be raised as much as the proper accommodation of the adjacent houses will admit, repairing the surface with good flints, broken small, and thereby keeping the surface very smooth. It has been proposed by a respectable inhabitant to lay an iron rail along one side of the street, near the side of the footpath, on the northern side of the road, so that in ascending the wheel or wheels on one side of the carriage might pass upon it. This is highly deserving of attention and experiment. The absolute rise from Ver Bridge is 101 feet. After crossing the summit opposite St. Peter's Street, the road descends at one in 27, for 284 yards, one in 23, for 294; it afterwards descends gently to the toll-bar, where it has fallen 68 feet below the summit; it is at this point the old road goes off to the White Hart Inn, and southern parts of the town.

Between the eastern extremity of the town and the toll-bar the new line has been accomplished by cutting through a hill, and embanking a valley of considerable extent. The hill cut through has luckily been chalk, which stands with steep slopes, and does not seem disposed to slip.

From the toll-bar the road proceeds to near the village of Colney, by gently-waving inclinations, none exceeding one in 29, and that only for short distances. The breadth is 27 feet in the narrowest parts, but generally 30 to 34 feet; and between the fences it is 43 to 56 feet, and there is also occasionally considerable portions of waste lands. The surface and shape is hitherto tolerably good, and the fences on the south side are generally cut down. But along the side of the road there are in many places very great banks of scrapings, some five feet high, and the footpath is in one instance six feet high above the road. These scrapings, and the footpath bank should be carried to raise the road in low ground, so that it shall be above the level of the adjacent fields.

The descent to the river Colney is one in 17, for 62 yards; one in 26½, for 110 yards; and the width here is only 22 to 28 feet of roadway, although it is 34 to 42 between the houses. This descent should be eased by filling up, and taking 18 inches from the top of the bank. After crossing the river, the road is upon very low ground for a considerable way, and should be raised about three feet, and to this work the before-mentioned banks of scrapings should be applied. To the eastward of the houses the inclinations are very irregular; the width is from 28 to 37 feet, and between the fences 35 to 50. In some parts the surface of the road is four feet below that of the adjacent fields, and the fences on the south side are injurious; the road should be brought into a regular state by filling up the hollows; materials for this may be had by sloping the edge of the field on the south side, so as to admit sun and air; the hedge should be replaced at or near to the bottom of the slope, and afterwards be prevented from growing to a greater height than five feet.

Proceeding onward, the road passes over some flat low ground to the bottom of Ridge Hill; it is here much too low, it becomes a sort of general drain for the adjacent lands, and is thereby also kept soft and damp in wet weather; it should be raised from two to three feet. On the hill itself, by the new cut now making at a very considerable expense, the ascent will be one in 20 for 572 yards, and afterwards 1 in 19 for 214 yards; near the summit it will be one in 50. The descents on the eastern side will be one in 28 for 528 yards to where it joins the present road, and the width of this new road will be 30 feet between the footpaths, and thence to the base of the slopes will be about eight feet on each side; the lower part of the slopes will be 1½ horizontal to one perpendicular; the upper part 2½ horizontal to one perpendicular. This improvement will, on an average, have equally easy inclinations as that at Chalkhill; the roadway is considerably wider, besides the footpaths, and the side slopes are flatter; this latter circumstance arose from the ground being gravel and clay instead of chalk. The general direction will bring the new road through Ridge Hill into a straight line with that lately made between that hill and South Mims. From the eastern base of Ridge Hill to South Mims, the direction is quite straight, the width between the fences is 54 feet, and that of the roadway 35 feet. The shape of the road is good, and the quantity of

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gravel put on is sufficient, but it is put on promiscuously, whereas all the large stones should be carefully separated, and broken to less than six ounces, and laid on as top metal in the middle of the road. As this gravel is generally of a round form, and of itself incapable of binding, that is uniting into a firm body, it is therefore of importance to have a large proportion of it, say all above one inch diameter, broken; this, by being mixed with the smaller sort, would help to bind and render it a compact substance. This gravel should all be twice sifted and also washed, so as to clean it of all earthy particles; the road should be carefully cleared of mud before any gravel is put on, and then there should be a sufficient quantity put on by degrees so as to form a firm substantial body, afterwards particular attention should be paid to prevent ruts, by constantly filling them up, so as to preserve a smooth surface, and any water from lying on the road.

Between South Mims and the termination of the Trust, near Barnet, the road consists of a succession of unnecessary bendings, and inconveniently steep ascents and descents. It is seldom a road so very crooked and hilly can be found in any equal distance of public road, and that more especially where the adjacent ground is so very favourable for making a good road.

At South Mims the road turns to the southward, at inclinations of one in 22, it then bends considerably to the eastward, and descends in a crooked manner, at one in 25, &c. to Mims Wash, along which it passes for a considerable way upon so low ground as to be several feet under water whenever there is any flood in the brook. Upon this brook there is a very substantial brick bridge of three arches, over which the road passes, and then again falls down to low ground, and after a considerable bend ascends Dancer's Hill at one in 16; having reached the summit, the road turns towards the north-east at nearly a right angle, and after proceeding in that direction for some distance, it again turns at another right angle, and descends at one in 19, to some low ground in front of the lawn, &c. of George Byng, Esq. It then ascends, at one in 15, to the summit of the ridge upon which Barnet is situated.

As a great public road nothing can be more imperfect than this; it is very crooked; it is in sundry instances inconveniently steep; the surface is, in some places, seven feet below that of the adjacent fields, and at Mims Wash it is liable to be flooded. An effectual remedy for this is to leave the present road at the western extremity of South Mims, and proceed on nearly a level, along the fields to the north-east of the church and village; but instead of descending into Mims Wash, to cross the present road, and pass along the fields on the south side of the road in nearly a straight line to the bridge; from the bridge the line should pass on to the field on the north side of the low ground, which is out of the reach of floods; it should afterwards ascend Dancer's Hill along the present road, at one in 30; having reached the summit it should then proceed in nearly a right line, descending at one in 30, to the low ground; and then ascending at the same rate to the present road, near the western extremity of the town of Barnet; this accomplished, would form a very direct and easy communication, and in this District, where the intercourse is so great, this improvement seems urgent.

	Expenditure. £. s. d.	Tolls, Amount of £. s. d.
The Tolls were let for three years from the year 1816, for -		2,510 — —
N. B. This was previous to any additional Tolls under the Exchequer-Bill Act.		
The surveyor's account for one year ending Lady day 1817 - - - £. 2,099 7 6		
Deduct improvements - - 250 — —		
	1,849 7 6	
Incidental account - - £. 169 1 —		
Deduct debt discharged - - 100 — —		
	69 1 —	
Interest of debts - - - - - -	300 — —	
Salaries - - - - - - -	110 — —	
		2,328 8 6
Surplus - - £.		181 11 6

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	£.	s.	d.
By this statement it appears that previous to advancing the rate of Tolls to repay the money borrowed from the Exchequer-Bill Commissioners, for the improvement of Ridge-hill, that they let for	2,510	—	—
That the expenditure was - - - - - - -	2,328	—	—
And that the surveyor's account for the ordinary repairs was -	1,849	—	—

or about 168 *l.* per mile; the surplus, over the general expenditure (even if the Tolls maintained the amount for which they let in 1816), viz. 181 *l.* 11 *s.* 6 *d.* is too small to reduce the debt much, and is totally inadequate to defray the expense of the improvement I have recommended between South Mims and Barnet; and the advance under the Exchequer-Bill Act being already appropriated to repay the 6,000 *l.* borrowed of these commissioners for Ridge-hill, it seems clear that for any other improvements upon the road, under this Trust, that other funds must be provided. The amount necessary will be known when accurate plans, sections and estimates of the improvements have been made out; but the rate of 168 *l.* per mile should, exclusive of extensive improvements, keep the road in a perfect state, including raising small hollows, widening where necessary, clearing outside drains, and putting in cross drains, and cutting and trimming the fences, furnishing well cleansed gravel, and properly broken stones.

The following are the tolls now taken, and which include those added under the Exchequer-Bill Act, laid on to repay the money borrowed to improve Ridge-hill.

Chaise and two horses - - - - - - - -	12 *d.*
D° - - four D° - - - - - - - -	24 *d.*
D° or coach and six D° - - - - - - -	36 *d.*
Team not exceeding four D° - - - - - - -	24 *d.*
D° for five D° or more - - - - - - -	36 *d.*
Saddle-horses, each - - - - - - - -	1½ *d.*
Cattle, &c. per score - - - - - - - -	10 *d.*
Sheep, &c. &c. D° - - - - - - - -	5 *d.*

When it is considered, that within these few years, the trustees have made an extensive improvement by means of a new road between South Mims and Ridge-hill; that they have made some expensive embankments on the south side of St. Albans; and that they, upon the suggestions of the Holyhead road commissioners, did not hesitate to borrow 6,000 *l.* to improve Ridge-hill; I say, under all these circumstances the commissioners upon this Trust have set a laudable example.

Mr. Isaac Pigot, is clerk and treasurer,
And Mr. Norris, surveyor to this Trust.

WHETSTONE TRUST.

THIS Trust commences at the southern termination of the St. Albans Trust, near the Obelisk, which is north of Barnet; it passes through this town and Whetstone, and over Finchley Common to Highgate gatehouse, a distance of 8½ miles.

It is unlucky that the towns of St. Albans, Barnet and Highgate, stand upon the summit of hills, and that the road, in order to pass through them, has to cross ridges and valleys alternately; whereas by passing a few miles to the east or west of the present line most of the hills would have been avoided.

To render the road in this Trust as perfect as circumstances admit, it is necessary that some hollows should be raised, and the inclinations eased. The descent from Barnet is 1 in 21 for 66 yards; 1 in 14 for 132; and 1 in 18 for 66 yards: these two latter are evidently too steep, and the uppermost is only admissible if kept hard and smooth. In ascending to Whetstone the first part is 1 in 21 for 66 yards, and 1 in 18½ for 121; this latter is too steep, and the whole may be easily remedied by cutting a little near the top of the hill, and raising the hollow on the north side. There are also sundry others, that is to say, near the seven-mile stone, at the Green Man Inn, at the sixth mile, and at the Old Lion Inn. Materials for raising these hollows may sometimes be obtained by cutting the adjacent ridges,

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sometimes by lowering the footpaths, which are in some instances much too high in some places, by cutting off unnecessary bends in the road fences.

Gravel may be generally had adjacent to the road; and the keeping it smooth and hard consists of having the cross section in a good form, the side and cross drains, and the adjacent ditches, clear and perfect; but, above all, to have the gravel perfectly cleansed, which I expect can only be accomplished by repeated siftings and washing in water. It should also be separated from all stones above an inch diameter, and these larger stones should be properly broken with a small hammer, to not more than six ounces weight, and then mixed with the top metal, in order to fix or bind it. The road is generally of sufficient width, and is not much injured by trees or hedges: Those newly planted on Finchley Common should always be kept low.

The Tolls taken upon this road are,

Chaise and two horses		8 *d.*
D° - - four D°		16 *d.*
Coach and six D°		24 *d.*
Team, or waggon, narrow wheels		15½ *d.*
D° - - D° - six and nine inch D°		9 *d.*
In winter, narrow wheels allowed to carry only	3 tons. —	
D° summer - D°	3 tons. 10 cwt.	
In winter, broad wheels	5 tons. 10 cwt.	
In summer - D°	6 tons. —	
Saddle-horse		1½ *d.*
Cattle, per score		12 *d*
Sheep, pigs, &c. D°		6 *d.*

	£.	s.	d.	
By the return made to the Committee of the House of Commons in 1817, it appears that the tolls then let for	4,000	—	—	per an.
That there was the interest of 2,700*l.* at 5 per cent. viz.	135	—	—	
Salary of surveyor	120	—	—	
A clerk	50	—	—	
	305	—	—	
Sum for repair of road and reducing debt	3,695	—	—	

The annual expense for repairs, upon an average of four years, previous to 1817, is, in the before-mentioned return, stated at 3,083*l.* 6*s.* 7½*d.*; this, upon 8½ miles of road, is at the rate of 362 *l.* 14*s.* per mile, being double of the most expensive of the other Trusts, where the materials are much more difficult to be procured. It is not stated that in this expense any particular improvement has been lately made; nor did I notice any upon the inspection; but in justice to the Trustees it ought to be stated, that sundry essential improvements have, in the course of some years past, been made in this Trust, say, near Barnet and Finchley Common.

From what I can judge, this revenue ought to cover the expense of all the improvements here recommended, and afterwards pay off the debt.

Thomas Brown is clerk to the Trust.

William Richards, surveyor.

HIGHGATE ARCHWAY COMPANY.

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THE new Road belonging to this Company commences at the northern base of Highgate Hill, passes along its eastern side, and terminates at the Old Highgate Road, in Upper Holloway, being a distance of scarcely 1 ½ mile. The width of the carriageway is generally 35 feet, and the footpath 8 feet. The inclinations beginning at the north end are 1 in 33; 27½; 29½; and 1 in 23 from near the tavern on the south side up to the Archway.

Hitherto the materials employed have not been either selected or applied in the most judicious manner, consequently the road has, in wet weather, been frequently dirty and heavy. Some of the inclinations are greater than desirable or necessary, and might be reduced with advantage.

The cross section has also, in some instances, too much of curvature. The enormous expense which has been incurred in this short distance puts all comparison of income quite out of the question. The tolls for the year, ending 28th February last, produced 2,400*l.* The repairs have been let by contract for 420*l.* per annum, being about 280*l.* per mile. The salaries of officers have amounted to about 300*l.* per annum. This latter article, if considered merely as for 1½ mile of road, is unprecedented.

But, be this as it may, as success in this trust depends upon the keeping the tolls moderate, and the road in a perfect state, competition may be expected to enforce judicious and unremitting attention.

HIGHGATE and HAMPSTEAD TRUSTS.

THE portion of this trust, upon which the Irish mail coach travels, leaves the Archway Road at Upper Holloway, and passes through Holloway and Highbury to Islington, being a distance of nearly 2 miles. The breadth of the road varies very much, part of it being in the nature of a street, and, including footpaths, 92 feet in width, but other portions of it are only about 40 feet.

The inclinations are sufficiently easy, the greatest being 1 in 30.

The roadway has hitherto been repaired with gravel or ballast, defective as regards selection, cleansing, and application. Stones have been lately laid down by the side of the road, which if properly managed, may improve the workable roadway.

The cross section has frequently too much curvature, having 17 inches of versed sine upon a chord line of 31 feet, whereas my general practice is only about one half of that, of which the principal part is near the sides, to operate as a drain.

The distance upon which the mail coach passes forming so small a portion of the whole trust, which, upon an average of three years, produced an annual revenue of 11,536*l.*; and the expenditure of this part of the trust not being distinguished, nor any mention of the whole length in miles, no satisfactory inference can be drawn from the general statement. But it is reasonable to expect that, with proper management, the tolls upon the above mentioned 2 miles of road, are quite sufficient to keep it in a proper state of repair.

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STATEMENT showing the Lengths, Revenue, &c. of the several Trusts between Shrewsbury and London; made out from the Clerks and Surveyors Returns to Parliament in 1819.

	NAMES OF TRUSTS.	Miles of Mail Road.	Total Miles in each Trust.	Debt.	Interest.	Tolls.	Net per Mile.
				£.	£.	£.	£.
1.	Shrewsbury District of Watling Street -	7	7	4,050	202	705	72
2.	Wellington - D° - and Branches - -	7	21	1,900	95	1,305	58
3.	Shiffnal - - D° - and Branches - -	4	10 1/4	240	12	650	62
4.	Wolverhampton and Branches - - -	14	26	3,856	193	1,710	58
5.	Bilston and Wednesbury - - - -	3 3/4	11	2,528	126	1,242	111
6.	Wednesbury and Birmingham, and Branches	7 1/2	14 1/2	2,900	145	2,085	134
7.	Birmingham and Stonebridge - - -	8 1/4	8 1/4	6,517	326	1,299	111
8.	Stonebridge to Dunchurch - - - -	19	19	300	15	1,697	88
9.	Dunchurch to Old Stratford - - -	29	29	5,000	250	3,563	114
10.	Old Stratford to Hockliffe - - - -	14	14	1,200	60	1,743	120
11.	Hockliffe to Dunstable - - - -	4 1/4	4 1/4	6,040	302	2,205	448
12.	Dunstable and Shafford House - - -	12	12	5,100	255	1,940	140
13.	St. Albans and South Mims - - -	11 1/2	11 1/2	5,972	298	2,510	192
14.	Whetstone - - - - - - -	8 1/2	8 1/2	2,100	105	3,820	437
15.	Highgate and Hampstead - - - -	4	20	7,900	395	11,536	557
		154 1/4	216 3/4	55,603	2,779	38,010	—

CONCLUSION.

IT may be useful, in concluding this Report, to recapitulate sundry matters, which apply generally to all the districts:

1. It appears that, from the interference of a great number of commissioners (although each well intentioned) the multiplicity of opinions and directions tends to perplex the surveyors, and prevents the carrying any well-digested scheme steadily into effect; and therefore it would be advisable to have general meetings, say only once or twice a year, in order to receive reports, make general regulations, pass accounts, and elect a committee, of, say five persons, who should manage the executive part of the business, as is the general case with regard to canals.

2. That it is advisable to have, annually, a regular specification made out of what is required to be done in each Trust, during the ensuing 12 months, and this work to be let to some responsible contractor, upon conditions distinctly defined, and without any restrictions as to employing old and unfit workmen; it would then become the interest of the contractor to take active measures, both with respect to procuring materials, and using them, and keeping effective persons constantly upon the road.

3. This would relieve the surveyor of all the detail of employing workmen, seeing that they worked faithfully, also as to procuring materials; all he would have to do would be to see that the road was conducted, in all respects, agreeably to the specification; and an able and respectable surveyor might in this way attend to at least 30 miles of road, and have an adequate salary.

4. Having distinct specifications, as a written law, all discretionary directions from different trustees, or even the surveyor, would be put an end to; the contractor would know his duty, and could be fairly checked.

5. As to the practical part, it is of importance to keep the surface of the road above that of the adjacent fields; where it is got too low; it should be raised, or removed to fresh ground.

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6. The road should be kept open to the sun and air, therefore, cut down and remove high hedges and trees, slope banks, &c.

7. The roadway should be well drained and kept dry; the cross section of the road should be made, and kept of a flat form, to suffer the water to pass off to the other side drains, and no more. The whole curve in 30 feet should not exceed eight or nine inches, one half of this on each side should compose these side drains, three or four inches are sufficient, because the water should never (where it can be avoided) be suffered to run far along the road before it is conducted into a cross drain, which ought to be particularly attended to, and conducted into natural watercourses or field ditches.

8. Particular attention should be paid, either to find a naturally dry bottom for the roadway, or to construct one; and avoid as much as possible suffering the workable materials coming into contact with clay. And this may always be accomplished by means of gravel, sand, vegetable soil, chalk, or bottoming stones; but this bottoming should be made perfectly firm and regular, so as to receive the top workable metal of an equal thickness.

9. This top workable metal, or layer, or stratum, should be of equal and uniform quality, freed of all clayey or earthy matter, by sorting, sifting, skreening, and not unfrequently, by washing. If the material be stones, they should be broken, so as not to exceed six ounces for repairing old roads, and eight ounces for making new roads. If it is gravel, all round stones of above one inch should be separated, broken, and then mixed with the gravel.

10. The roads should be regularly shaped between the footpaths, or where there are none, between the fences. This admits the water always to get off freely. In the country, about 18 or 20 feet, in the middle, should be made with sound bottom, and good hard materials, the sides may be made and repaired with inferior; but near large towns, or where there is much traffic, the whole breadth should have workable metal.

11. Where a road has been originally constructed, or by improvement brought into what is here described, it should never be suffered to go into disrepair. This is to be acccomplished by unremitting and judicious attention, so that no water be suffered to lie on the road, but, as any deficiency occurs, to have it immediately remedied by thin coats of hard materials frequently applied. The making and maintaining roads should be considered as a separate and very important business. Workmen should be bred, and induced constantly to apply themselves to this work only, the same as any other distinct trade. They would then become acquainted with the quality of materials, and the proper method of using them; and contractors by attending to roads only, would acquire experience and have better profits from lower prices. Hitherto road-making and repairing have not had sufficient importance attached to them.

THOMAS TELFORD.

London,
30th June 1819.